

NOTES ON SAFE USE

The followings are notes for your safe use of this product. Please review them before you start using.

Notes on this manual

This manual is written assuming that readers have basic knowledge of this product, so technical terms are not described here. The contents of this manual are subject to change without notice.

Hazard alert symbol and signal words concerning safety in this manual

The hazard alert symbol, signal words which indicate the degree of danger, notice and reference are used as follows concerning your safety.

Hazard alert symbol : 

Signal words : **DANGER, WARNING, CAUTION**



WARNING

: Indicates potentially hazardous situation which, if misoperated, could result in death or injury of user.



CAUTION

: Indicates potentially hazardous situation which, if misoperated, could result in injury of user or property damages.



: Just calls your attention to safety operations, working procedures, setting places and so on. It doesn't directly indicate death, injury of user or property damage.

Notice

: For calling reader's notice.

Reference

: Indicates reference items described elsewhere.

Attention on handling of equipment

1. Do not remove covers or disassemble the equipment except when necessary. It may cause not only malfunction but also a risk of electric shock.
2. Be sure to turn off the power switch before removing a module.
3. Be sure to turn off the equipment before connecting with the specified cable.
4. Do not subject the equipment to violent vibration or great impact. The equipment may be damaged.
5. Avoid using or storing the equipment in the following locations :
 - A place where the temperature is high or low
 - A place to which vibration or shock is given
 - A place where the humidity is extremely high
 - A place where radio waves are generated
 - A place with excessive dust
 - A place that may be struck by lightning
 - A place where snow or rain falls
6. When connecting/disconnecting cables, always hold them by the plug.
7. Don't drop metal such as clips or foreign matters into the equipment or insert them to it.
8. Don't splash the equipment with water or other liquids.
9. Regarding the Lithium Battery
 - Don't use unspecified battery in the equipment.
 - Because it will result in damages or may cause injury.
 - And also, when exchanging or disposing it, please contact office.
10. Wipe the dust on the equipment by using a dry soft cloth. If the equipment is very dirty, soak the cloth in water or neutral cleanser and twist the cloth strongly, and then wipe the dirty equipment by using the strongly twisted cloth. In case a neutral cleanser is used, wipe the equipment again by water-soaked cloth. Take care not to put water into the equipment while wiping it.

Regular maintenance is recommended

Some of the parts in this product may deteriorate in time and become unusable even when they are used and stored under normal conditions. To assure long-term product use and safety, it is recommended that the product be inspected at three-year intervals or upon each 8000 hours use. For the inspection and repairs of this product, consult with your sales representative or local source.

TA-45/BS-45 TRIAX SYSTEM

OPERATION MANUAL

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1. Outline

The system consisting of the BS-45 and TA-45, even with its small size, has SDI output and Q-TV signal transmission. It also makes functions of the HL-45/HL-45W work properly with various remote control panels.

1.1 Features

● BS-45 Base Station

- 1 Small design and light weight. Half-rack 4U size.
Use of the specified rack mount adaptor (optional) makes it easy to install in a rack. It is also possible to install in a rack mount for the BS-553/593.
- 2 Uses the Y/C transmission method. The transmission distance is 600 m in using a triaxial cable of 8.8 mm in diameter. It is 1000 m in use of 14.5 mm cable.
- 3 The Q-TV transmission function is provided as an option. The transmission distance is 300 m.
- 4 The SDI (D1) output function is provided as an option.
- 5 The DC drive function is provided as an option.

● TA-45 Triax Camera Adaptor

- 1 The TRIAX connector block is movable.
- 2 The intercom system has one line. The selection of ENG and PROD is made at the TA side.
- 3 The Q-TV transmission function is provided as an option. The transmission distance is 300 m.
- 4 The audio system has one line. 2 lines audio system is provided as an option.

● Control Panels

- 1 OCP-45
The various settings is made by the menu even without the MCP.
- 2 RMP-45 + RM-45
The RM-45 is a small remote controller.
- 3 RCP-50
It is possible to control the HL-45/HL-45W fully. The memory card can be used.
- 4 OCP-388, MCP-388, and other Ikegami panels
Control panels and CSU for the broadcasting can be used about some functions the camera has.

1.2 Compatibility

This system corresponds to the control command for the HK/HL series cameras (called the HL command), but not for the HC series cameras (called the HC command). Therefore, the HC-43/HC-D45 can be installed with the TA-45, but controls are not possible.

Some HL-45s that have already been shipped do not correspond to the HL command. In this case, use of it in this triaxial system (BS-45, TA-45) requires modification.

In addition, this triaxial system rejects the BS-40, TA-40 and OCP-40.

1.3 Options

● RBK-45

This is usually used with the OCP-45. The RM-45 cannot be installed on it. It does not have switches for the menu operation as the OCP-45 has them.

● RMP-45

This has the blank panel, installed on the front of the BS-45 when the RM-45 is not used, and switches for the menu operation. The blank panel should be removed when the RM-45 is installed on the front of the BS-45.

● RM-45

Installed on the RMP-45, this is used as the front control panel of the BS-45. Use of the RMH-45 (specified adaptor) allows it to be installed in a drawer. Moreover, it can also be used as a portable remote controller by being installed in the RMC-45 (specified case).

● RMC-45

This is the specified case to use the RM-45 as a portable remote controller. It has the TALLY and VTR START/STOP switches.

● RMH-45

This is the specified adaptor to use the RM-45 as a control panel by being installed in a drawer like the OCP-45. It has the TALLY and CALL switches.

● RCP-50

This is used as the front control panel of the BS-593. It also can be used by being installed in the BS-45. So, it can control various functions of the HL-45/HL-45W. The specified connection cable is necessary in order to do so.

● OCP-45

This is a control panel suitable to the HL-45/HL-45W and the BS-45.

● SDI Output

The SDI (D1) signal output function is provided as an option. It is necessary to install the SDI BOARD on the BS MPU module.

● Q-TV Transmission

Video signal for a prompter can be transmitted from the BS-45 to the TA-45.

● Coaxial Cable Connection

This transmission system usually uses the triaxial transmission method. It can also use the coaxial transmission method.

● 2 Channels for Microphones

It is possible to increase the MIC (audio) lines from the camera head to the BS.

● Rack Mount Adaptor

The BS-45 can be installed in the specified rack mount adaptor for the BS-553/BS-593 as well as for the BS-45 (19-inch 4U size).

Ikegami recommends the specified rack mount adaptor for the BS-45, in which the BS-45 can be installed easily.

● DC Drive (order-optional)

The BS-45 works with DC 12V by use of the POWER module corresponding to both AC and DC.

1.4 Specifications

● Standard Accessories

- BS AC cable
- Operation manual

● BS-45 Base Station

- GENLOCK IN BNC (LoopThru) VBS/BB
- RET-1 VIDEO IN BNC (LoopThru) VBS
- RET-2 VIDEO IN BNC (LoopThru) VBS
- Q-TV VIDEO IN BNC (LoopThru) VBS
- COMPOSITE OUT BNC×2 1.0 Vp-p 75Ω
- COMPONENT VIDEO OUT BNC 75Ω
- RGB VIDEO OUT BNC 0.7 Vp-p 75Ω
- SDI OUT BNC×2 0.8 Vp-p 75Ω (optional)
- PM OUT BNC×1
- WFM OUT BNC×1
- WFM REMOTE connector 7-pin
- INTERCOM connector 24-pin (RTS/4W)
- TALLY IN connector 7-pin
- TALLY OUT connector 5-pin
- INTERCOM headset connector XLR or 110×1 (customization)
- MIC output connector XLR-3×1
- Command connector ×2 OCP, MCP
- TRIAX connector (customization)
- COAX connector BNC (optional)
- Power supply AC or DC 12V
- Power consumption Approx. 90W
- Dimensions W212×H155×D291 mm
- Weight Approx. 6kg

● TA-45 Triax Camera Adaptor

- MIC input connector ch1 From camera head
ch2 XLR-3×1 (optional)
- DC IN connector XLR-4
- DC OUT connector 4-pin 11 to 17 V
- VF POWER connector 3-pin 11 to 17 V
- RET VIDEO OUT BNC 1.0 Vp-p 75Ω
- Q-TV VIDEO OUT BNC 1.0 Vp-p 75Ω (optional)
- INTERCOM headset connector XLR or 110×1 (customization)
- TRIAX connector (customization)
- COAX connector BNC (optional)
- Camera interface 50-pin
- Transmission distance 600 m
(using ϕ 8.8 mm triaxial cable)
- Q-TV 300 m
- Power supply From BS-45 or DC IN connector
- Power consumption Approx. 7W
- Dimensions W110×H233×D203 mm
- Weight Approx. 2.2kg

● Control Panels

1 OCP-45 (ROTARY type)

- Power supply 11 to 17 V
- Power consumption Approx. 5W
- Dimensions W90.7×H341×D47.9 mm
- Weight Approx. 1.5kg

2 OCP-45 (JOYSTICK type)

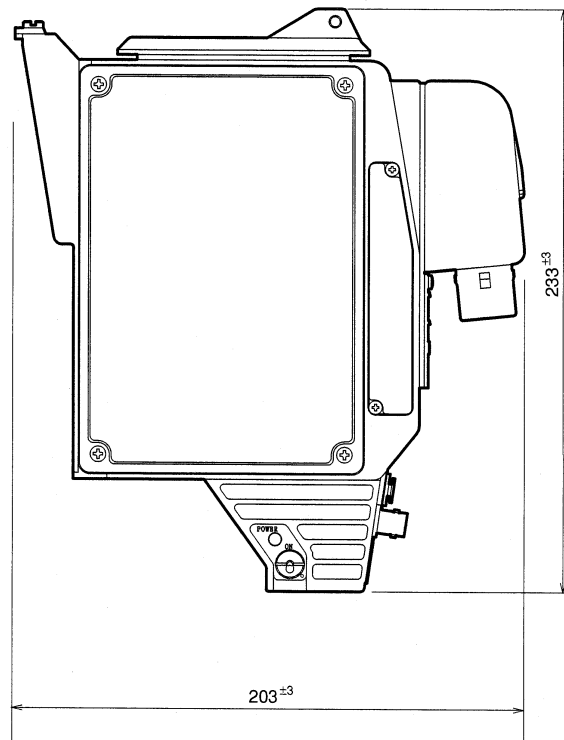
- Power supply 11 to 17 V
- Power consumption Approx. 5W
- Dimensions W92.2×H355.5×D107.2 mm
- Weight Approx. 2kg

3 RMP-45 + RM-45

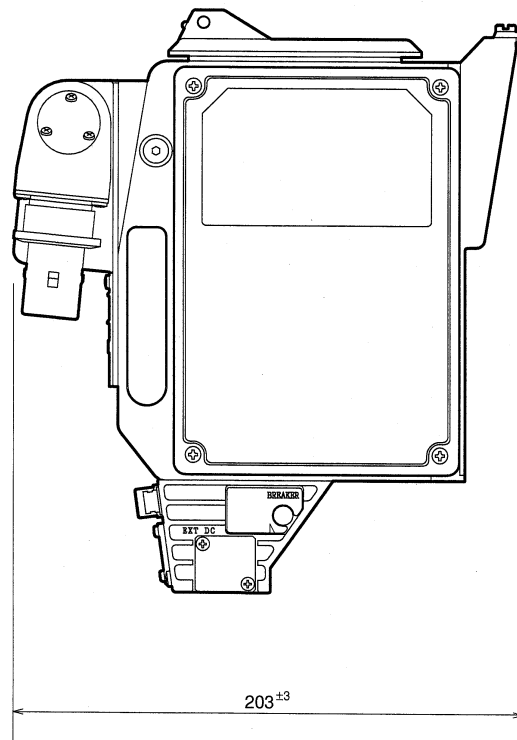
- Power supply 11 to 17 V
- Power consumption Approx. 1W
- Dimensions W152×H151×D41.3 mm
- Weight Approx. 0.5kg

1.5 External Appearance

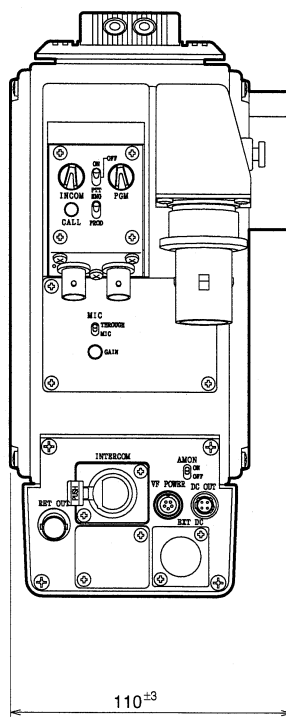
[TA-45 Right Side View]



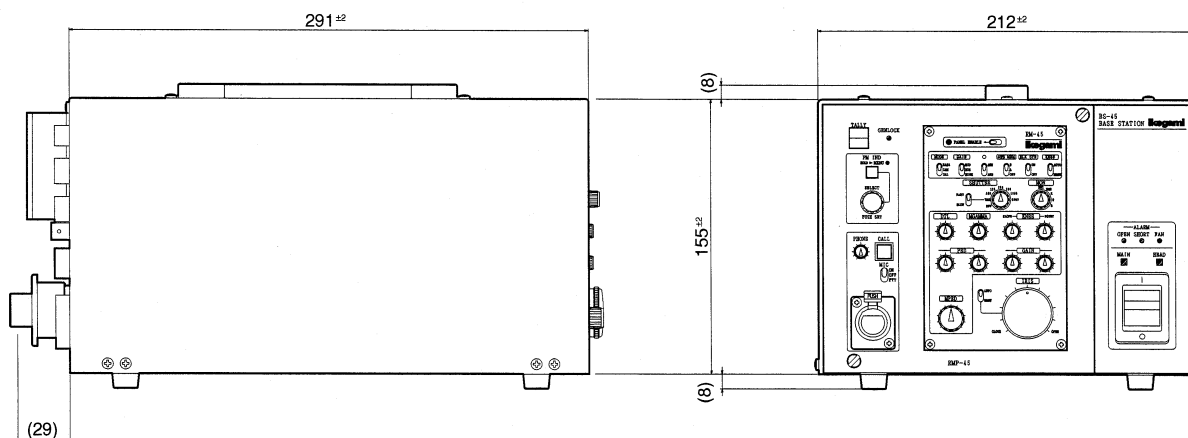
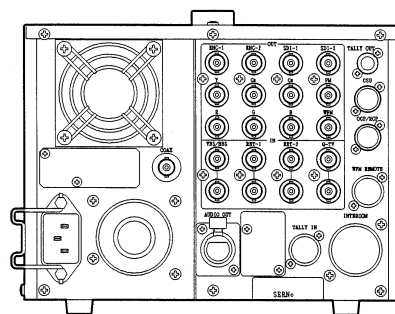
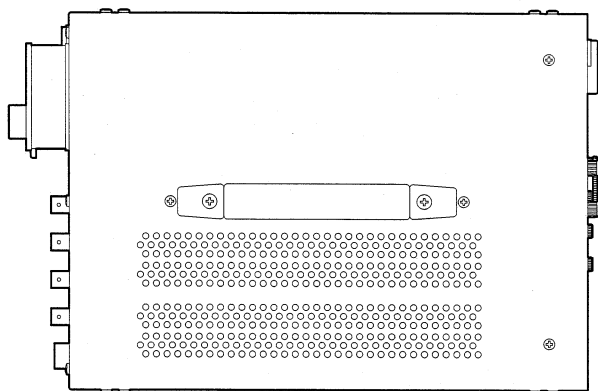
[TA-45 Left Side View]



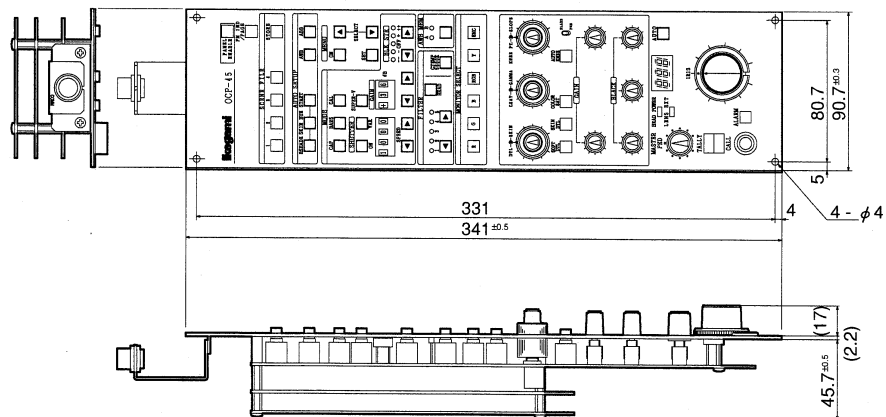
[TA-45 Rear Side View]



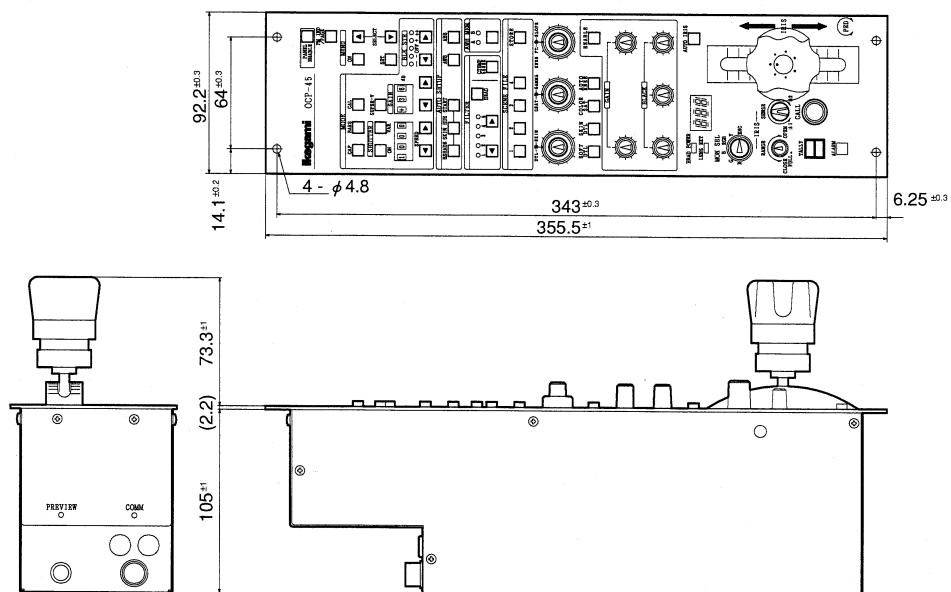
[BS-45 with RMP-45/RM-45]



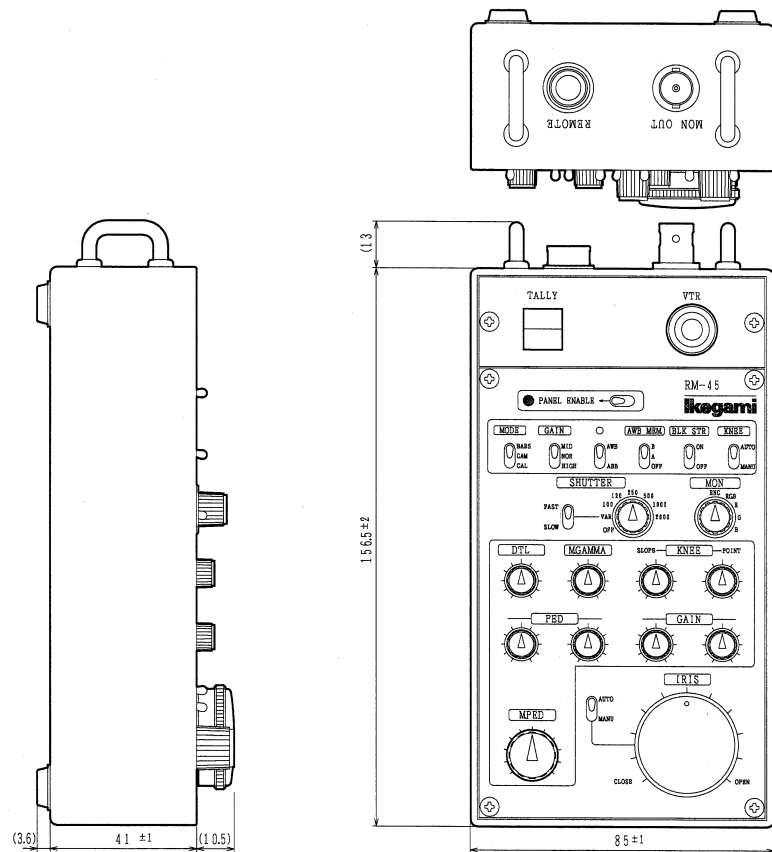
[OCP-45 (ROTARY TYPE)]



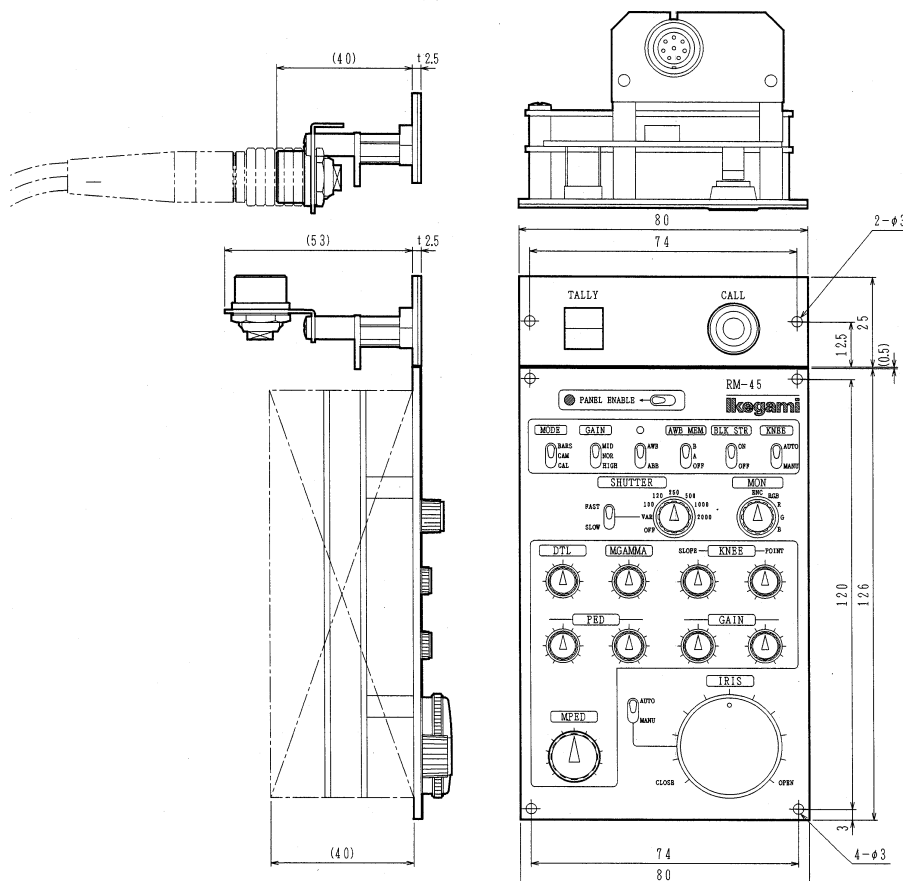
[OCP-45 (JOYSTICK TYPE)]



[RM-45/RMC-45]



[RM-45/RMH-45]



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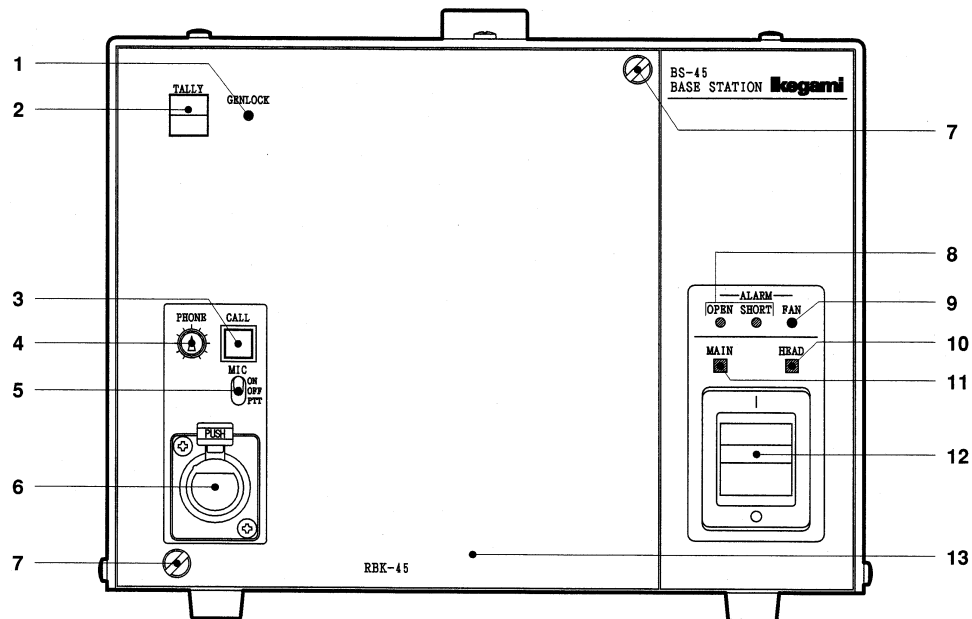
2. Names and Functions

This chapter explains the names and the functions of each part.

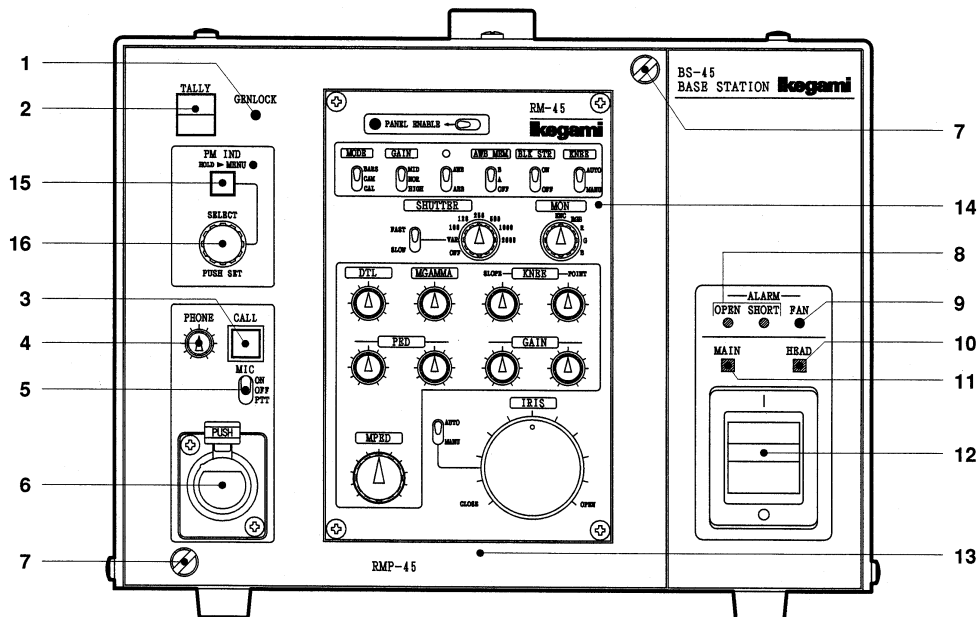
The illustration and text are laid out in the opened pages in order to distinguish the position of the switches and connectors at a glance.

2.1 Front of BS-45

■ BS-45 with RBK-45



■ BS-45 with RMP-45



- | | |
|-------------------------|-----------------------------|
| 1 GENLOCK Indicator | 9 FAN ALARM Indicator |
| 2 TALLY Indicators | 10 HEAD POWER Indicator |
| 3 CALL Switch | 11 BS MAIN POWER Indicator |
| 4 PHONE Adjuster | 12 BS MAIN POWER Switch |
| 5 MIC Switch | 13 RBK-45/RMP-45 Panels |
| 6 INCOM Connector | 14 RM-45 Control Panel |
| 7 Panel Securing Screws | 15 PM IND/MENU Switch |
| 8 CABLE Indicators | 16 PM PAGE/MENU SELECT Knob |

1 GENLOCK Indicator

Lights up when the camera is in the GENLOCK mode (external synchronization).

2 TALLY Indicators

Are indicators for the R TALLY and the G TALLY.

The R TALLY indicator lights up when the CALL switch of the camera head or the other is pressed.

3 CALL Switch

The R TALLY indicator of the camera head lights up only while this switch is being pressed. The R TALLY indicators on remote control panels connected to the BS also light up in parallel mode operation (refer to "4.2 Setting of Switches").

4 PHONE Adjuster

Adjusts the volume of the intercom receiver.

5 MIC Switch

Turns on or off the microphone of the intercom.

Communication is possible when this switch is set to "ON" or kept pressed down to "PTT".

6 INCOM Connector

Connect a headset for the intercom. The connector varies according to specifications. Communication with a headset connected to the TA can be made when the ENG/PROD switch on the rear of the TA is set to "ENG".

7 Panel Securing Screws

The BS adopts the RBK-45, RMP-45 or RCP-50 (remote control panel) according to uses. These screws can secure one of them. Refer to the instruction manual (separate volume) about operating the RCP-50.

8 CABLE Indicators

Show abnormality of the camera cable. When either indicator lights up, check the camera cable and the connector.

- OPEN : Lights up when the camera cable is not connected or broken.
- SHORT : Lights up when the camera cable or the connector is short-circuited due to water condensation or other causes.

9 FAN ALARM Indicator

Lights up when the fan motor stops. Turn off the power of the BS before contacting our office.

10 HEAD POWER Indicator

Lights up when the power is provided from the BS to the camera head.

11 BS MAIN POWER Indicator

Lights up when the main power of the BS is turned on.

12 BS MAIN POWER Switch

Turns on or off the main power of the BS and the power supplied to the camera head.

13 RBK-45/RMP-45 Panels

The BS adopts the RBK-45, RMP-45 or RCP-50 (remote control panel) according to uses. Refer to the instruction manual (separate volume) about operating the RCP-50.

14 RM-45 Control Panel

Can be installed to the front of the BS by using the RMP-45 panel.

It can also be used as a portable remote controller by being installed in the RMC-45 (special case for the RM-45). In this case, attach the blank panel (supplied) on the RMP-45 panel.

15 PM IND/MENU Switch

Used to turn on or off the PM IND mode (indication of the diagnosis etc.) and MENU mode (various settings of the camera head and BS).

Pressing this switch turns on the PM IND mode, and the lamp lights up. Pressing it for more than 2 seconds turns on the MENU mode, and the lamp lights up. In either case, the characters is mingled with the PM OUT signal. Pressing it again turns off the PM IND or MENU mode, and the lamp goes out.

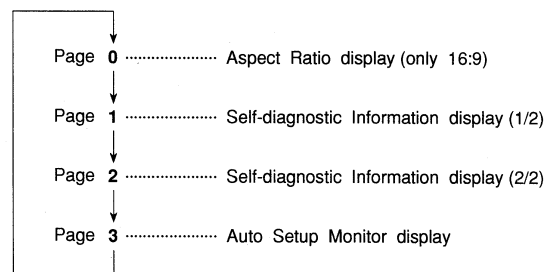
In addition, the PM IND and MENU modes cannot be used simultaneously.

NOTICE Pay attention to the character superimposition on the main video signal by selecting the HEAD MENU in the MENU mode.

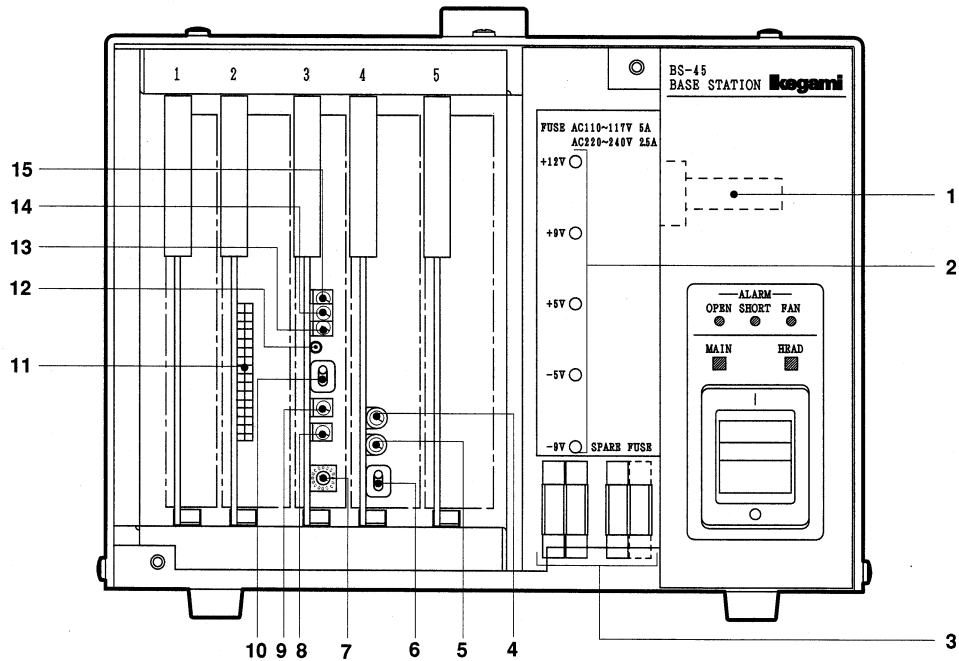
16 PM PAGE/MENU SELECT Knob

Turning this knob changes the PM PAGE when the PM IND mode is turned on. This knob cannot turn off the PM IND/MENU switch.

Besides, turning it can select an item in the MENU mode. And, pressing it can decide the MENU item.



■ Inside of BS-45



- | | |
|--------------------------------|----------------------------------|
| 1 Fuse | 9 SC FINE Control |
| 2 DC Output Indicators | 10 REM/LOCAL Switch (SC/H PHASE) |
| 3 SPARE FUSE Holders | 11 RBK/RCP Connector |
| 4 Y LEVEL Control | 12 GENLOCK Indicator |
| 5 C LEVEL Control | 13 BURST GATE Control |
| 6 REM/LOCAL Switch (Y/C LEVEL) | 14 STAB WIDTH Control |
| 7 SC PHASE Switch | 15 STAB PHASE Control |
| 8 H PHASE Control | |

1 Fuse

Prevents over-current from flowing in the BS.

Use one specified according to the input voltage.

(AC100-117V : 5A, AC220-240V : 2.5A)

2 DC Output Indicators

Light up when the voltages to BS modules are output.

3 SPARE FUSE Holders

Used to hold spare fuses.

Here are three fuses at shipment.

4 Y LEVEL Control

Adjusts the Y level.

This is controllable only when the REM/LOCAL switch (Y/C LEVEL) is set to "LOCAL".

5 C LEVEL Control

Adjusts the C level.

This is controllable only when the REM/LOCAL switch (Y/C LEVEL) is set to "LOCAL".

6 REM/LOCAL Switch (Y/C LEVEL)

Selects whether the Y and C levels are adjusted by the BS (LOCAL) or by the remote control panel (REMOTE).

- LOCAL : Makes the control of the above controls (#4 and #5) effective.
- REMOTE : Makes the control by the menu effective. (OCP-45/RMP-45/RCP-50)

7 SC PHASE Switch

Roughly adjusts the SC phase in genlock mode. (1 step : 45 degrees)

This is controllable only when the REM/LOCAL switch (SC/H PHASE) is set to "LOCAL".

8 H PHASE Control

Adjusts the SYNC phase. (About $\pm 4 \mu\text{sec}$)

This is controllable only when the REM/LOCAL switch (SC/H PHASE) is set to "LOCAL".

9 SC FINE Control

Finely adjusts the SC phase. (Adjustment range : approx. 60 degrees)

This is controllable only when the REM/LOCAL switch (SC/H PHASE) is set to "LOCAL".

10 REM/LOCAL Switch (SC/H PHASE)

Selects whether the SC and H PHASE are adjusted by the BS (LOCAL) or by the remote control panel (REMOTE).

- LOCAL : Makes the control of the above controls (#7 to #9) effective.
- REMOTE : Makes the control by the menu effective. (OCP-45/RMP-45/RCP-50)

11 RBK/RCP Connector

Used to connect the RBK/RMP/RCP-50.

Each specified connection cable is necessary.

12 GENLOCK Indicator

Lights up when the phase of the synchronizing signal of the camera head and that of the external synchronizing signal being supplied match, and synchronization is locked.

13 BURST GATE Control

Used to adjust the phase of blanking pulse of chromatic signal transmitted from the camera head to the BS.

Since this control had been finely adjusted before the unit left our factory, no adjustment is required except for repairs.

14 STAB WIDTH Control

Used to adjust the width of blanking pulse of luminous signal transmitted from the camera head to the BS.

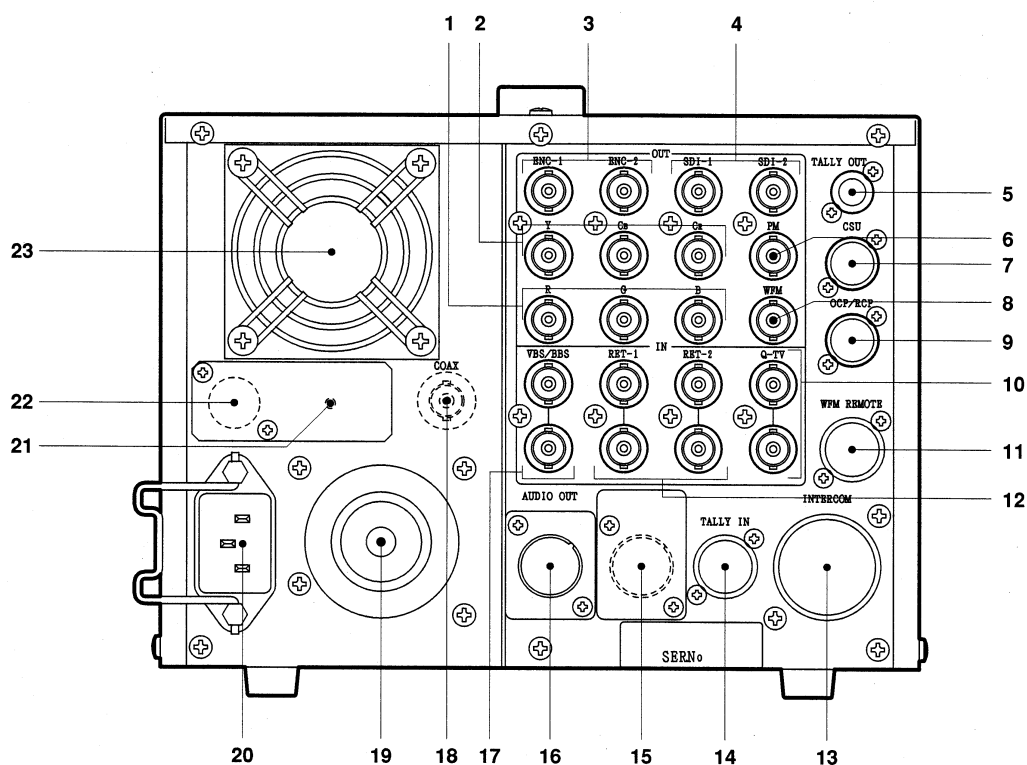
Since this control had been finely adjusted before the unit left our factory, no adjustment is required except for repairs.

15 STAB PHASE Control

Used to adjust the phase of blanking pulse of luminous signal transmitted from the camera head to the BS.

Since this control had been finely adjusted before the unit left our factory, no adjustment is required except for repairs.

2.2 Rear of BS-45



- | | |
|--------------------------|---|
| 1 R/G/B OUT Connectors | 13 INTERCOM Connector |
| 2 Y/CB/CR OUT Connectors | 14 TALLY IN Connector |
| 3 ENC OUT Connectors | 15 AUDIO OUT-2 Connector (order-optional) |
| 4 SDI OUT Connectors | 16 AUDIO OUT Connector |
| 5 TALLY OUT Connector | 17 VBS/BBS IN Connectors |
| 6 PM OUT Connector | 18 COAX Connector (order-optional) |
| 7 CSU Connector | 19 CAMERA Connector |
| 8 WFM OUT Connector | 20 AC IN Connector |
| 9 OCP/RCP Connector | 21 Breaker (order-optional) |
| 10 Q-TV IN Connectors | 22 DC IN Connector (order-optional) |
| 11 WFM REMOTE Connector | 23 Fan |
| 12 RET IN Connectors | |

1 R/G/B OUT Connectors

Output the R, G and B signals without the SYNC (synchronization) signal.

2 Y/Cb/Cr OUT Connectors

Output Y, Cb and Cr signals. The SYNC signal is added to the Y signal.

3 ENC OUT Connectors

Output the ENC (composite) signal. (2 outputs)

4 SDI OUT Connectors

Output the SDI (serial digital interface, 270Mbps) signal when the SDI BOARD (optional) is installed. (2 outputs)

5 TALLY OUT Connector

Outputs the TALLY signal to a picture monitor.

6 PM OUT Connector

Outputs the video signal to a picture monitor.

7 CSU Connector

Connect between the CSU and the BS with a CP cable.

A remote control panel such as the OCP-45 can be connected in some operating systems. Refer to "4.2 Setting of Switches" for details.

8 WFM OUT Connector

Outputs the video signal to a waveform monitor.

9 OCP/RCP Connector

Connect between the OCP or RCP and the BS with a CP cable. When the RCP-50 is connected to the BS front, control from a remote controller connected here is impossible. Refer to "4.2 Setting of Switches" for details.

10 Q-TV IN Connectors

Input the Q-TV (prompter) signal to be sent to the triax camera adaptor. The bridge connection can be made.

The function of the Q-TV signal transmission between the BS-45 and TA-45 is order-optional.

11 WFM REMOTE Connector

Outputs the STAIR signal to a waveform monitor.

The waveforms of the R, G and B signals can be monitored simultaneously by connecting a waveform monitor and selecting "RGB" or "SEQ" with the MONITOR SELECT switch on the control panel.

This connector also outputs the signal for controlling the time axis of the R, G and B signals.

12 RET IN Connectors

Input the RET (return) signal to be sent to the camera head. The bridge connection can be made. (2 inputs)

13 INTERCOM Connector

Connect an external intercom system.

14 TALLY IN Connector

Input the TALLY control signal from an external system.

S3 and S4 switches (POWER/MAKE SELECT) in the MPU module allow selecting the TALLY mode.

Indicator		Camera Head		BS		Control Panel	
TALLY Call		R	G	R	G	R	G
System	R	☉	—	☉	—	☉	—
	G	—	☉	—	☉	—	☉
Camera Head		—	—	☉*1	—	☉*2	—
BS		☉*1	—	—	—	☉*1	—
Control Panel		☉*1	—	☉*1	—	—	—

*1 : The indicators are turned off when the CALL switch on the BS or the control panel is pressed with the R TALLY "ON" from the system.

*2 : In case of the OCP-45/RCP-50, pressing the CALL switch of the camera head makes its R TALLY indicator blink for about 20 seconds. Pressing its CALL switch with the indicator blinking makes the blink stop.

15 AUDIO OUT-2 Connector (order-optional)

Outputs the audio signal sent from the camera head.

16 AUDIO OUT Connector

Outputs the audio signal sent from the camera head.

17 VBS/BBS IN Connectors

Input the VBS or BBS signal for synchronizing. The bridge connection can be made.

18 COAX Connector (order-optional)

Used when a coaxial cable is used to connect between the triax camera adaptor and the BS.

19 CAMERA Connector

Used when a triaxial cable is used to connect between the triax camera adaptor and the BS.

Using a triaxial cable of 14.5mm in diameter allows the signals to be transmitted as far as 1000m.

20 AC IN Connector

Insert the supplied AC power code plug and fix it with the stopper.

21 Breaker (order-optional)

Cuts off the power supply when the amount of the input current increases beyond 10A, with the BS driven by the DC power (10.5V to 17V). Set up the BS so that the amount of the input current is within 10A before pressing this switch in if the power supply has been cut off.

22 DC IN Connector (order-optional)

Used when the BS is driven by the DC power (10.5V to 17V). When DC power is supplied, it Changes itself into DC operation.

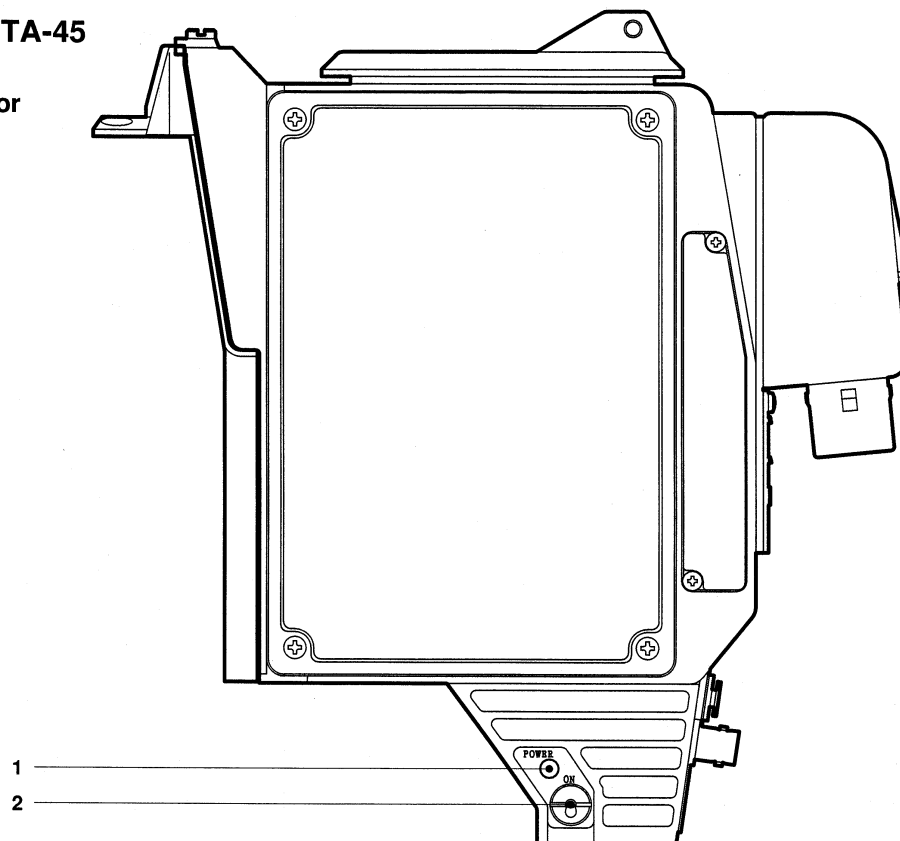
23 Fan

Prevents the temperature inside the BS from rising.

2.3 Sides of TA-45

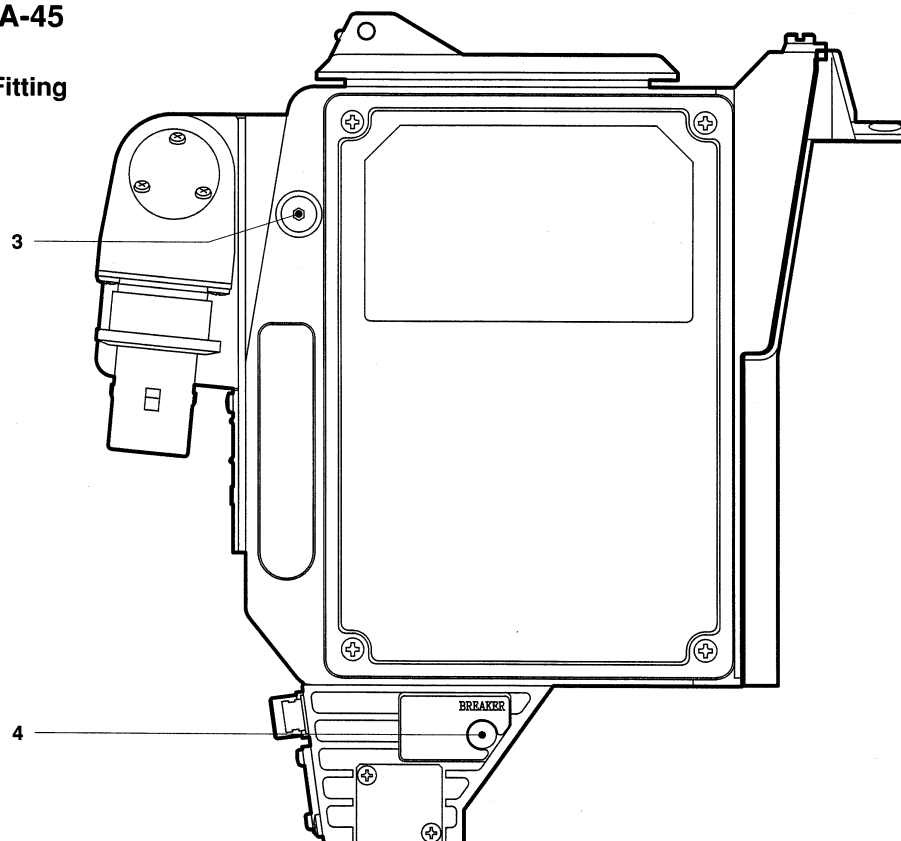
■ Right Side of TA-45

- 1 POWER Indicator
- 2 POWER Switch



■ Left Side of TA-45

- 3 Shoulder Belt Fitting
- 4 Breaker



1 POWER Indicator

Shows the state of the power in the camera head and the triax camera adaptor besides state of the power supplied from the BS.

Color \ Power	Camera Head	TA	Power from BS
Green	ON	ON	ON
Orange	OFF	OFF	ON
Off	*1	*1	OFF

*1 : No regard to the POWER switch positions.

In addition, this indicator is turned off when the POWER switch is set to "OFF", with the camera head and the triax camera adaptor driven by the DC power supplied from the EXT DC IN connector at the rear of the TA.

2 POWER Switch

Turns on or off the power of the camera head and the triax camera adaptor.

WARNING Be careful to handle them because a high voltage of DC 160V is transmitted from the BS when the BS is powered even if this switch is set to "OFF", with a triaxial cable connected between the triax camera adaptor and the BS.

3 Shoulder Belt Fitting

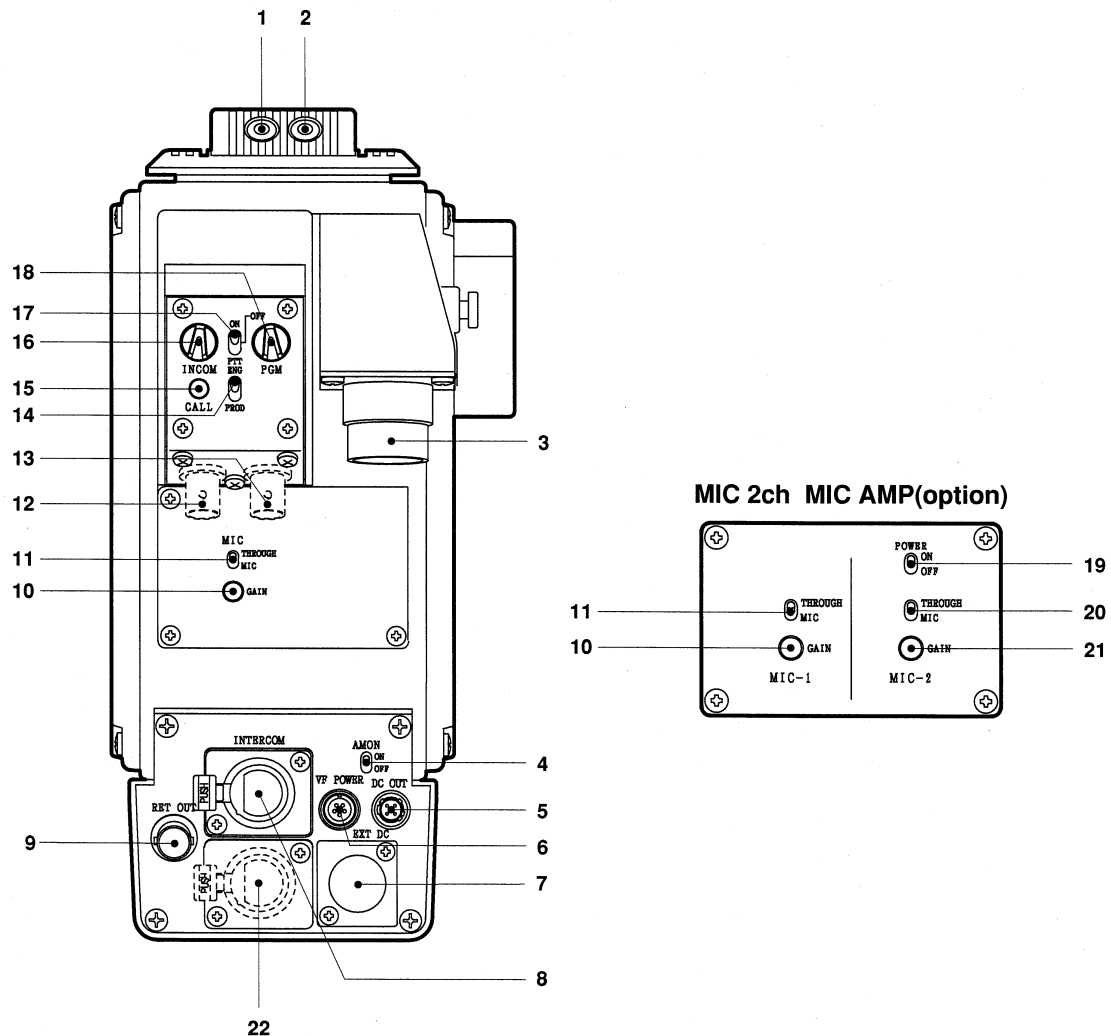
Used to attach a shoulder belt (optional).

4 Breaker

Cuts off the power supply when the amount of the current increases beyond 4A by some trouble caused in the camera head or the triax camera adaptor.

Set up them so that the amount of the current is within 4A before pressing this switch in if the power supply has been cut off.

2.4 Rear of TA-45



- | | |
|--------------------------------|---|
| 1 REAR TALLY (RED) Indicator | 12 Q-TV OUT Connector (order-optional) |
| 2 REAR TALLY (GREEN) Indicator | 13 COAX Connector (order-optional) |
| 3 CAMERA Connector | 14 ENG/PROD Switch |
| 4 AUDIO MONITOR Switch | 15 CALL Switch |
| 5 DC OUT Connector | 16 INCOM LEVEL Adjuster |
| 6 VF POWER Connector | 17 INCOM MIC Switch |
| 7 EXT DC IN Connector | 18 PGM LEVEL Adjuster |
| 8 INTERCOM Connector | 19 MIC POWER Switch (MIC-2) (order-optional) |
| 9 RET OUT Connector | 20 MIC SELECT Switch (MIC-2) (order-optional) |
| 10 MIC GAIN Adjuster (MIC-1) | 21 MIC GAIN Adjuster (MIC-2) (order-optional) |
| 11 MIC SELECT Switch (MIC-1) | 22 MIC-2 IN Connector (order-optional) |

1 REAR TALLY (RED) Indicator

Inform persons at the back of the camera operator that the R TALLY is "ON". It also works together with the R TALLY indicator in the VF.

2 REAR TALLY (GREEN) Indicator

Inform persons at the back of the camera operator that the G TALLY is "ON". It also works together with the G TALLY indicator in the VF.

3 CAMERA Connector

Used when a triaxial cable is used to connect between the triax camera adaptor and the BS.

Using a triaxial cable of 14.5mm in diameter allows the signals to be transmitted as far as 1000m.

4 AUDIO MONITOR Switch

Allows the PGM signal line to carry the audio signal of the microphone from the camera head to the BS when this switch is set to "ON". So, it is possible to check the MIC signal line.

5 DC OUT Connector (0.3A)

Supplies the DC power (10.5V to 17V) to the wireless receiver (optional).

6 VF POWER Connector (1A)

Supplies the DC power to the 6-inch VF (optional) which can be installed on the camera head.

7 EXT DC IN Connector

Used to supply the DC power from an AC adaptor or a battery when a coaxial cable is used to connect between the triax camera adaptor and the BS.

8 INTERCOM Connector

Connect a headset for the intercom. The connector varies according to specifications.

9 RET OUT Connector

Outputs the RET (return) signal transmitted from the BS.

10 MIC GAIN Adjuster

Adjusts the gain of the microphone connected to the camera head.

11 MIC SELECT Switch

Selects the gain of the microphone connected to the camera head.

- THROUGH : Used when the line output signal is input to the MIC connector. The signal passes through the microphone amplifier circuit.
- MIC : Used when a microphone is used.

12 Q-TV OUT Connector (order-optional)

Outputs the Q-TV (prompter) signal transmitted from the BS.

13 COAX Connector (order-optional)

Used when a coaxial cable is used to connect between the triax camera adaptor and the BS.

14 ENG/PROD Switch

Selects the line to be used to communicate.

- ENG : Makes it possible to communicate with an intercom system of the ENG line.
- PROD : Makes it possible to communicate with an intercom system of the PROD line.

15 CALL Switch

Used to call a VE (video engineer). The R TALLY indicators of the control panel and the BS light up and the buzzer sounds only while this switch is being pressed.

16 INCOM LEVEL Adjuster

Adjusts the volume of the intercom receiver of a headset. (ENG/PROD)

17 INCOM MIC Switch

Turns on or off the microphone of the intercom.

Communication is possible when this switch is set to "ON" or kept pressed down to "PTT".

18 PGM LEVEL Adjuster

Adjusts the volume of the program sound (PGM) of the intercom.

19 MIC POWER Switch (MIC-2) (order-optional)

Supplies the power (PHANTOM POWER +48V) to the MIC-2.

20 MIC SELECT Switch (MIC-2) (order-optional)

Selects the gain of the microphone connected to the MIC-2 IN connector.

- THROUGH : Used when the line output signal is input to the MIC connector. The signal passes through the microphone amplifier circuit.
- MIC : Used when a microphone is used.

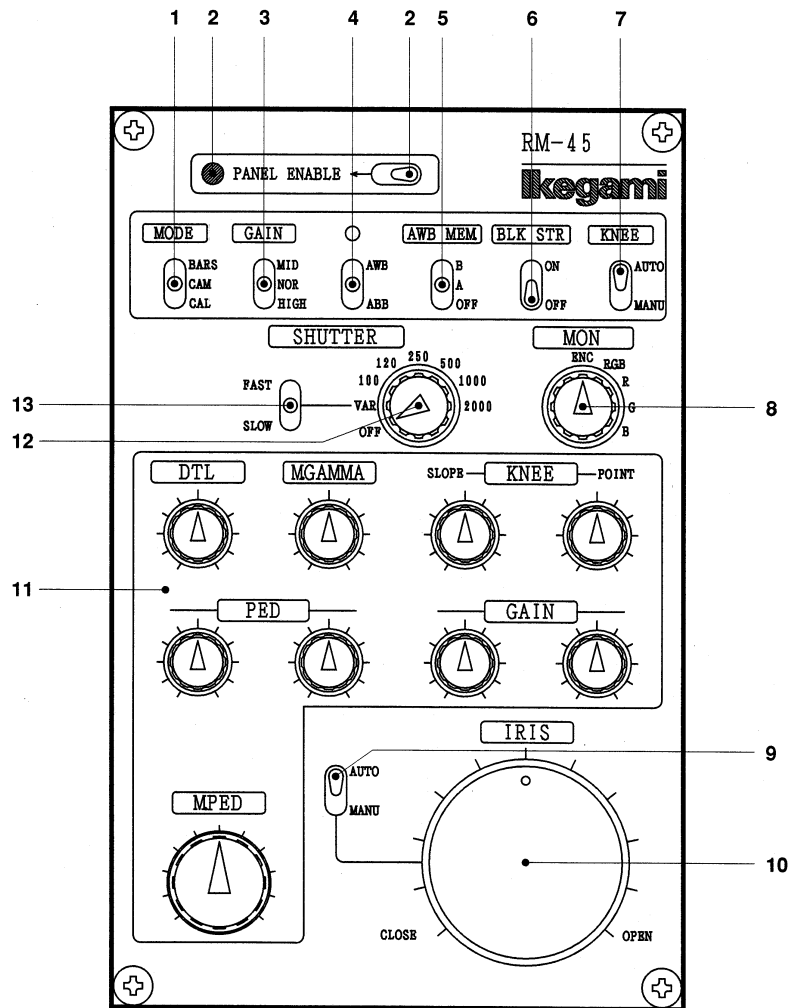
21 MIC GAIN Adjuster (MIC-2) (order-optional)

Adjusts the gain of the microphone connected to the MIC-2 IN connector.

22 MIC-2 IN Connector (order-optional)

Connects the output of the microphone, a mixer, the wireless receiver etc.

2.5 RM-45



- | | |
|-------------------------------------|---------------------------|
| 1 MODE Switch | 8 MONITOR SELECT Switch |
| 2 PANEL ENABLE Switch and Indicator | 9 IRIS AUTO/MANUAL Switch |
| 3 GAIN Switch | 10 IRIS Adjuster |
| 4 AWB/ABB Switch and AUTO Indicator | 11 VR Controls |
| 5 AWB MEMORY Switch | 12 SHUTTER Switch |
| 6 BLACK STRETCH Switch | 13 FAST/SLOW Switch |
| 7 KNEE Switch | |

1 MODE Switch

Selects the type of the camera head output signal.

- BARS** : Outputs the color bar signal.
CAM : Outputs the image signal.
CAL : Outputs the CAL signal.

2 PANEL ENABLE Switch and Indicator

This indicator lights up when the RM-45 is enabled. When it is turned off, pressing this switch down in the direction of arrow makes it turn on.

3 GAIN Switch

Generally set this switch to "NOR" (0 dB). Raise up the gain when sufficient quantity of light cannot be obtained.

4 AWB/ABB Switch and AUTO Indicator

- **AWB** : To obtain the white balance, set the AWB MEMORY switch to "A" or "B" and then press this switch up to "AWB".
- **ABB** : To obtain the black balance, press this switch down to "ABB".

Release this switch after the AUTO indicator is turned on. The AUTO indicator lights up during the AWB or ABB adjustment and goes out upon completion of the adjustment. It also blinks in case of an NG (when the adjustment fails). To cancel the adjustment, throw the AWB/ABB switch to the AWB side during the AWB adjustment or to the ABB side during the ABB adjustment.

When an NG occurs (the AUTO indicator blinks), reset the NG state by throwing this switch to the AWB side during the AWB adjustment or to the ABB side during the ABB adjustment. The AUTO indicator goes out. When the NG state occurs, camera head control is impossible until resetting of the NG state.

The AWB adjustment is invalid when the AWB MEMORY switch is set to "OFF" while ABB is active irrespective of the AWB MEMORY switch setting.

5 AWB MEMORY Switch

The camera head has two AWB memories: "A" and "B". White balance is obtained when "A" or "B" is selected by this switch and then the AWB/ABB switch is pressed up to "AWB". When this switch is set to "OFF", the standard color setting by the camera head is validated.

6 BLACK STRETCH Switch

Turns on or off the black stretch function.

7 KNEE Switch

Selects the AUTO KNEE or MANUAL KNEE.

8 MONITOR SELECT Switch

Selects the monitor signal output from the MON OUT connector. When "RGB" is selected, the R+G+B mix signal is output.

9 IRIS AUTO/MANUAL Switch

- **AUTO** : The lens iris is automatically adjusted to obtain the appropriate image level according to the brightness of the subject. Fine adjustment in a range of approx. ± 1 step is possible by turning the IRIS adjuster. The variable range by fine iris adjustment varies according to the subject state (brightness, etc.).
- **MANU** : The lens iris can be changed from OPEN to CLOSE by the IRIS adjuster.

10 IRIS Adjuster

Adjusts the lens iris.

11 VR Controls

• DTL Adjuster

Adjusts the DTL level.

• MASTER GAMMA Adjuster

Adjusts the master gamma level.

• KNEE SLOPE Adjuster

Adjusts the KNEE SLOPE.

• KNEE POINT Adjuster

Adjusts the KNEE POINT.

• R/B PEDESTAL Adjusters

Adjust the pedestal for Rch and Bch.

• R/B GAIN Adjusters

Adjust the gain for Rch and Bch.

• MASTER PEDESTAL Adjuster

Adjusts the master pedestal.

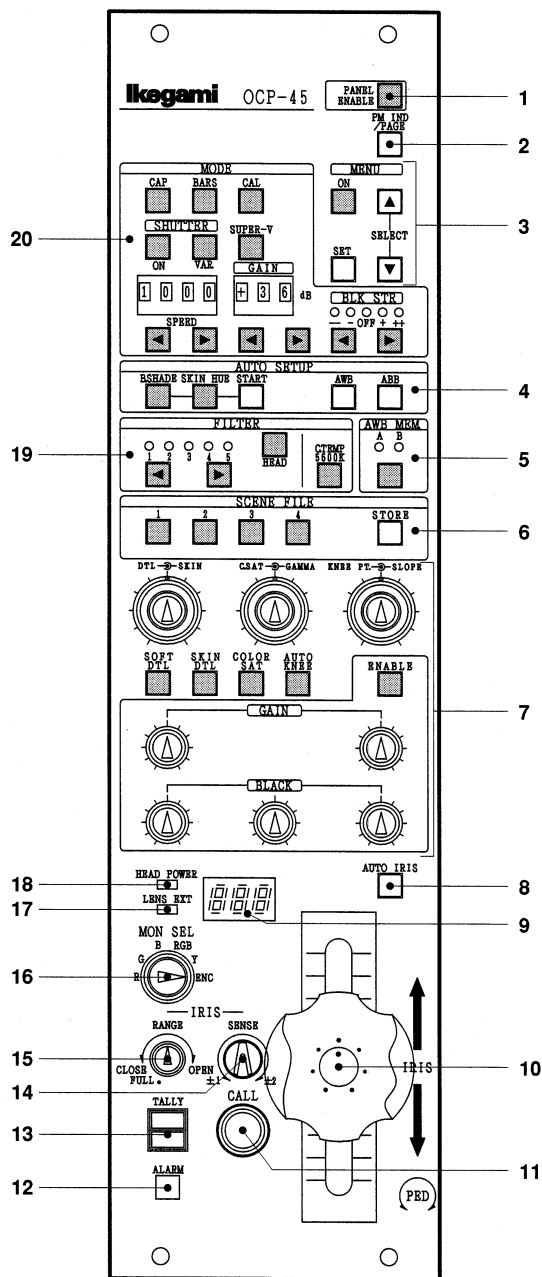
12 SHUTTER Switch

Selects the electronic shutter speed. When this switch is set to "OFF", the speed becomes 1/60 (NTSC) or 1/50 (PAL). When it is set to "VAR", the speed can be set to the desired value by the FAST/SLOW switch.

13 FAST/SLOW Switch

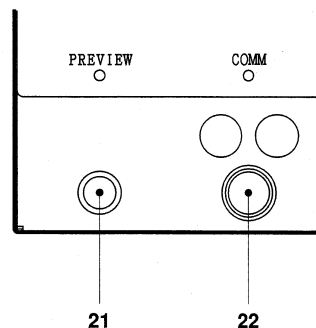
Used to set the electronic shutter speed to the desired value when the SHUTTER switch is set to "VAR". The speed increases when this switch is pressed up to "FAST", and decreases when pressed down to "SLOW".

2.6 OCP-45



- 1 PANEL ENABLE Switch
- 2 PM IND/PAGE Switch
- 3 MENU Switches
- 4 AUTO SETUP Switches
- 5 AWB MEMORY Switch
- 6 SCENE FILE Switches
- 7 MODE Switches and VR Controls
- 8 AUTO IRIS Switch
- 9 IRIS Indicator
- 10 JOYSTICK (IRIS, M-PED)
(PREVIEW Switch)

■ Top of OCP-45



The switches of ■ cannot be used when the on air tally guard is set to "ON" *. The START, AWB and ABB switches can be used only when the auto setup is canceled in the on air mode, but the auto setup cannot be executed.
(* That is when the No.5 of S1 switch in the OCP I/F BOARD is set to "ON".)

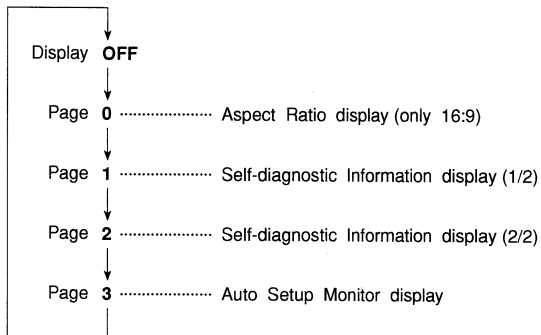
- 11 CALL Switch
- 12 ALARM Indicator
- 13 TALLY Indicators
- 14 IRIS SENSE Adjuster
- 15 IRIS RANGE Adjuster
- 16 MONITOR SELECT Switch
- 17 LENS EXT Indicator
- 18 HEAD POWER Indicator
- 19 FILTER Switches
- 20 MODE Switches
- 21 PREVIEW Connector
- 22 COMMAND Connector

1 PANEL ENABLE Switch

Allows OCP operation. This lights up when the OCP is in operation. Pressing this switch isolates the OCP and turns off the lamp.

2 PM IND/PAGE Switch

Pressing this switch overlays character information with the PM output of the BS. The information is displayed in the sequence indicated below.



3 MENU Switches

Perform the setting of menu.

- ON : Displays the menu.
- SELECT : Selects the menu item or changes the setting value.
- SET : Decides the selected item or setting value.

4 AUTO SETUP Switches

• BLACK SHADE, SKIN HUE, START Switches

Pressing the BLACK SHADE or SKIN HUE switch and then the START switch executes the auto setup. It is canceled if the START switch is pressed again during execution.

The lamps go out after completion. The START switch blinks in case of failure. At this case, press it to clear the error condition.

In addition, the SKIN HUE switch is invalid because the HL-45 and HL-45W do not have the SKIN HUE function.

• AWB, ABB Switches

Pressing the AWB or ABB switch executes the auto white balance or the auto black balance.

The lamps go out after completion. The switch blinks in case of failure. At this case, press it to clear the error condition.

5 AWB MEMORY Switch

The HL-45 (HL-45W) has two AWB memories (A and B). Select A or B with this switch and press the AWB switch. Then the AWB will be executed.

6 SCENE FILE Switches

Used to store and read scene files #1 to #4.

- Storing : Turn on the STORE switch and then press the file number switch to store a scene file.
- Reading : Press the file number switch to read a scene file.

7 MODE Switches and VR Controls

• DTL/SKIN Adjusters

Adjust the DTL and SKIN DTL edge levels.

Turn on the SKIN DTL switch and then adjust the SKIN DTL edge level.

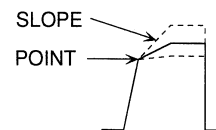
• C. SAT/GAMMA Adjusters

Adjust the color saturation and gamma levels.

As for the color saturation, turn on the COLOR SAT switch and then adjust the level manually. The control range is 0 to 130%. The burst level does not change even if the color saturation level changes.

• KNEE POINT/SLOPE Adjusters

Adjust the KNEE SLOPE and KNEE POINT manually for AUTO KNEE and MANUAL KNEE.



• SOFT DTL Switch

By turning on this switch, the edge signal enters the level limiter circuit to be softened against high contrast subjects.

• SKIN DTL Switch

Turning on this switch allows edge level of skin color part in the picture to be adjusted with the SKIN adjuster.

• COLOR SAT Switch

Turning on this switch allows amplitude of the chrominance signal to be adjusted with the C. SAT/GAMMA adjusters.

• AUTO KNEE Switch

Turning on this switch allows the AUTO KNEE mode.

• VR ENABLE Switch

Allows the R/B GAIN adjusters and R/G/B BLACK (flare or pedestal) adjusters to be valid.

• R/B GAIN Adjusters

Rch and Bch gain can be adjusted in the range of the $\pm 3\text{dB}$ or $\pm 6\text{dB}$. Refer to "4.2 Setting of Switches [Setting of OCP-45]" on this setting.

• R/G/B BLACK Adjusters

Adjust the Rch, Gch and Bch black (flare or pedestal).

8 AUTO IRIS Switch

Turning on this switch allows the AUTO IRIS mode.

9 IRIS Indicator

Displays the F-value of the lens iris. Value exceeding F-16 and up to CLOSE is indicated by "---" without displaying an F-value.

10 JOYSTICK**• IRIS, M-PED Controls**

Adjusts the lens iris and the master pedestal.

The master pedestal control may become one-sided if the ABB or the auto setup is executed with the knob not set to its center position.

• PREVIEW Switch

See the PREVIEW connector (#21).

11 CALL Switch

The R TALLY indicators on the camera head and the BS light up when this switch is pressed.

12 ALARM Indicator

Lights up when a fault (NG) is found by the diagnosis operation. In this case, the self-diagnostic information appears in a picture monitor screen for about 20 seconds.

13 TALLY Indicators

R TALLY (red) and G TALLY (green) indicators.

The R TALLY indicator lights up when the CALL switch on the camera head or the BS is pressed.

14 IRIS SENSE Adjuster

Sets the range of the iris control from between ± 1 stop to ± 2 stops.

15 IRIS RANGE Adjuster

Adjusts the iris value at IRIS center position of the IRIS adjuster (JOYSTICK).

16 MONITOR SELECT Switch

Selects the signal to be output to a picture monitor (PM) and a waveform monitor (WFM).

MON SEL MODE	R	G	B	RGB	Y	ENC
PM	R	G	B	R+G+B	Y	ENC
WFM	R	G	B	SEQ	Y	ENC



17 LENS EXT Indicator

Lights up when a lens extender is used.

18 HEAD POWER Indicator

Lights up when the HEAD POWER switch is turned on. It also blinks alternately with the ALARM indicator if the camera cable is defective (OPEN or SHORT).

19 FILTER Switches

Select the optical filter with the   switches.

Selection cannot be made from the OCP when the HEAD switch is turned on as the camera head has priority. In case of the camera head having the filter servo, pressing the HEAD switch allows the selection right to be transferred from the camera head to the OCP. Conversely, it is also possible for the selection priority to be passed from the OCP to the camera head.

Besides, the HEAD switch blinks when the filter servo is set to the manual mode.

Please note the filter switches apply to cameras with servo filter wheel. They do not operate with the HL-45/HL-45W.

• C. TEMP 5600K Switch

Sets the color temperature filter to 5600K.

20 MODE Switches**• CAP Switch**

Closes the lens iris to the CAP state.

• BARS Switch

Outputs the color bar signal.

• CAL Switch

Outputs the CAL signal of 100% level.

• SHUTTER Switches

Pressing the SHUTTER ON switch turns on the lamp of the switch. And, the preset shutter mode is selected, and the electronic shutter works. Pressing it again turns off the lamp. And, the shutter stops working. When the shutter works, the shutter speed is indicated on the LCD display.

Select the desired speed using the SPEED switches.

<div><div>◀</div><div>↔</div><div>▶</div></div>						
LCD display	100	120	250	500	1000	2000
Shutter speed	1/100 sec	1/120 sec	1/250 sec	1/500 sec	1/1000 sec	1/2000 sec

Pressing the SHUTTER VAR. switch turns on the lamp of the switch. And, the variable shutter mode is selected, and the shutter speed is indicated on the LCD display.

Select the desired speed using the SPEED switches. (NTSC : 1/60.3 sec to 1/201 sec, PAL : 1/50.3 sec to 1/200 sec)

• SUPER V Switch

Turns on or off the super V function.



• OFF : 400 TV lines (NTSC), 450 TV lines (PAL)

• ON : 480 TV lines (NTSC), 570 TV lines (PAL)

• GAIN Switches

Select the gain with the   switches. The selected value is indicated on the LED display. Normally set to "0dB".

• BLK STR Switches

Select the black press or the black stretch with the   switches. Normally set to "OFF".

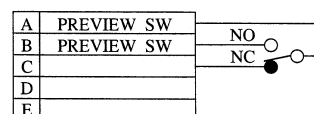
• Black Stretch : +3 (+ lit), +5 (+ ++), +7 (++) %

• Black Press : -3 (- lit), -5 (- --), -7 (--) %

The HL-45 and the HL-45W do not have the black press function but the black stretch function.

21 PREVIEW Connector

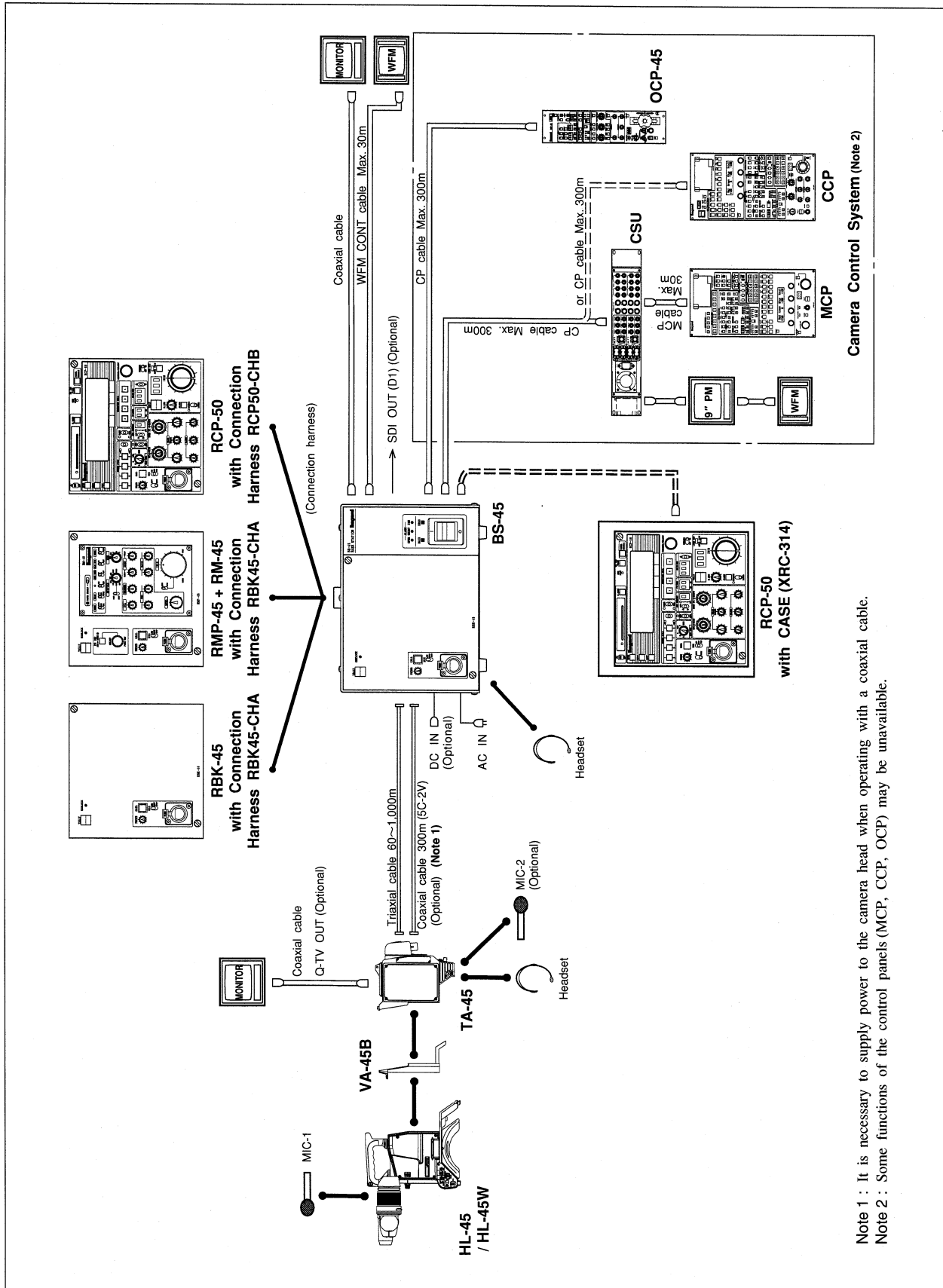
While the head of the JOYSTICK is pressed, pins of A and B become short-circuited.

**22 COMMAND Connector**

Connect the BS with a CP cable.

3. Installations and Connections

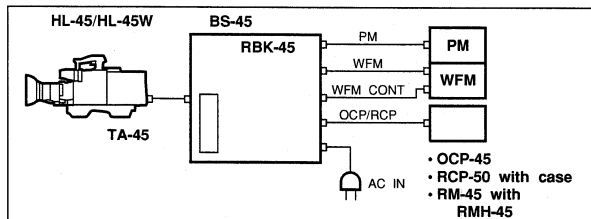
3.1 System Diagram



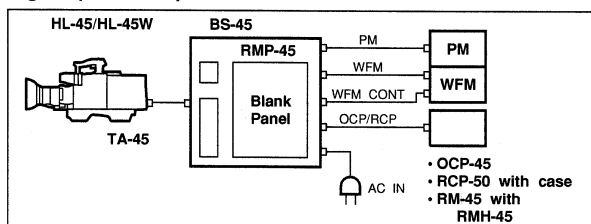
3.2 Operating Systems

There are various operating styles such as studio/field operation in which the camera head and the BS are connected with a triaxial cable, and self-contained operation. The control panel can be chosen according to customer's use.

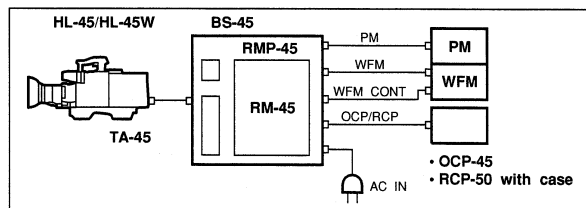
e.g. 1 (RBK-45)



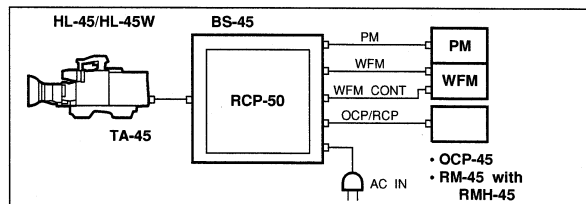
e.g. 2 (RMP-45)



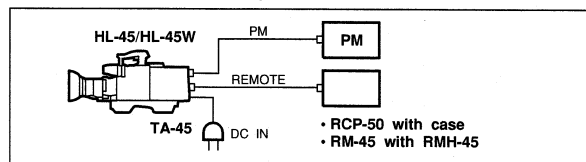
e.g. 3 (RMP-45+RM-45)



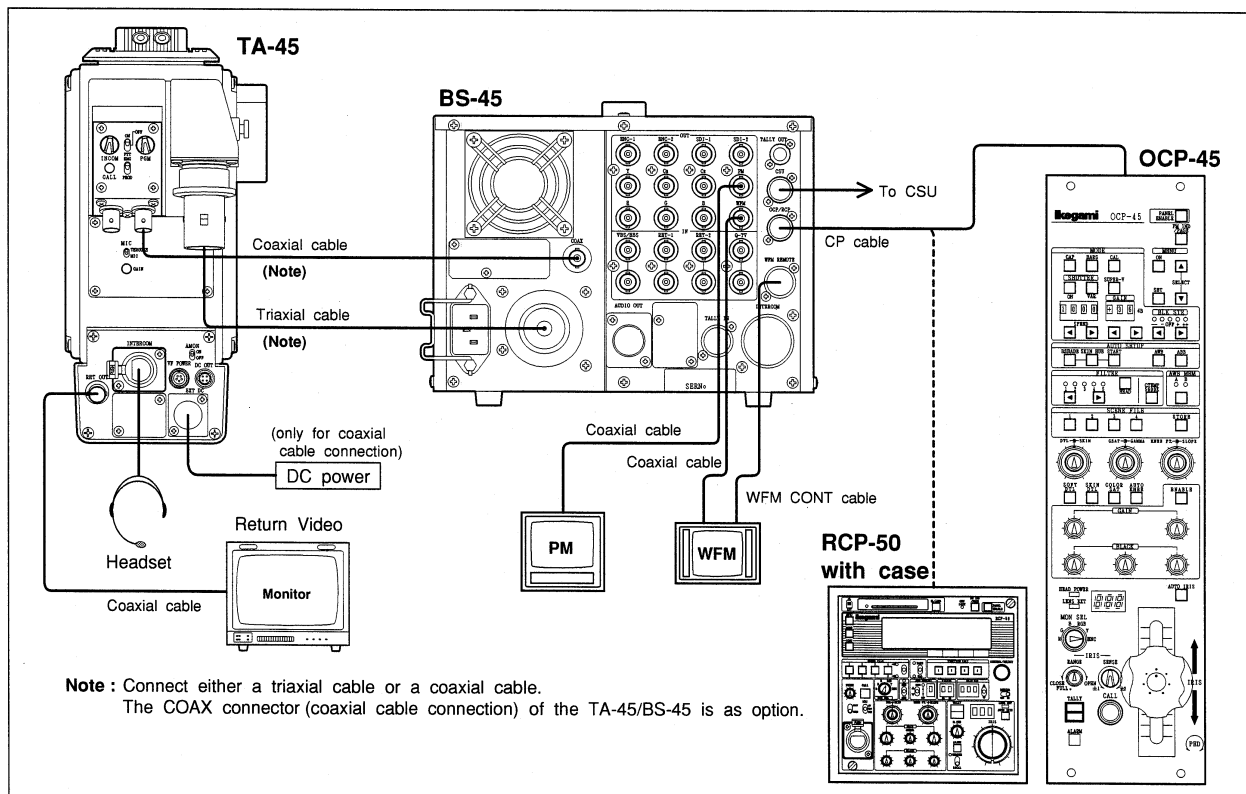
e.g. 4 (RCP-50)



e.g. 5 (Self-contained)

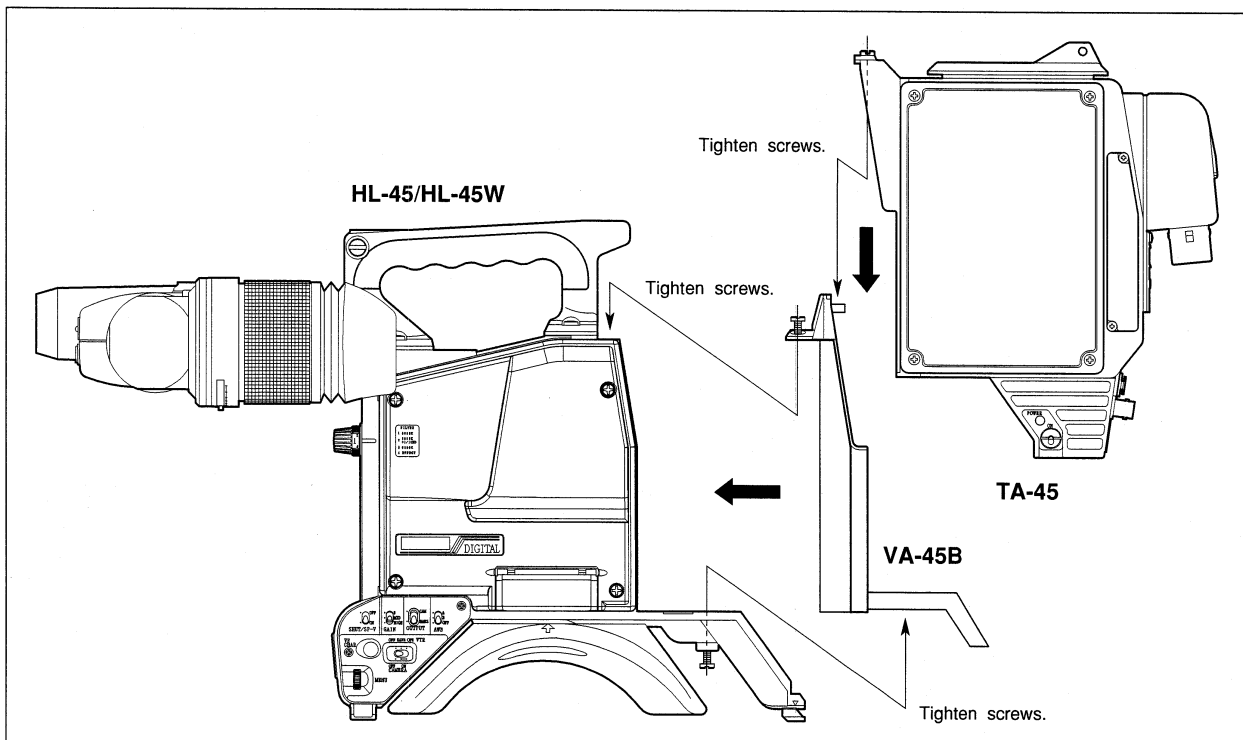


3.3 Connection of Equipment



3.4 Connection of Camera Head and TA

1. Install the TA-45 on the rear of the VA-45B.
Be sure to confirm that both connectors are connected properly.
2. Tighten two screws of the top or screw of the bottom of the TA-45 to fix.
3. Install the VA-45B (with TA-45) on the rear of the HL-45/HL-45W.
Be sure to confirm that both connectors are connected properly.
4. Tighten top and bottom two screws of the top of the VA-45B and the bottom of the HL-45/HL-45W to fix.



3.5 Connection of TA and BS

For a triaxial cable, connect the CAMERA connector of the TA-45 and that of the BS-45.

For a coaxial cable, connect the COAX connector of the TA-45 and that of the BS-45.

[Maximum transmission distance]

- Triaxial cable : ϕ 8.8 Max. 600 m (Fujikura), ϕ 14.5 Max. 1000 m (Fujikura)
- Coaxial cable : 5C-2V Max. 300 m

Notice

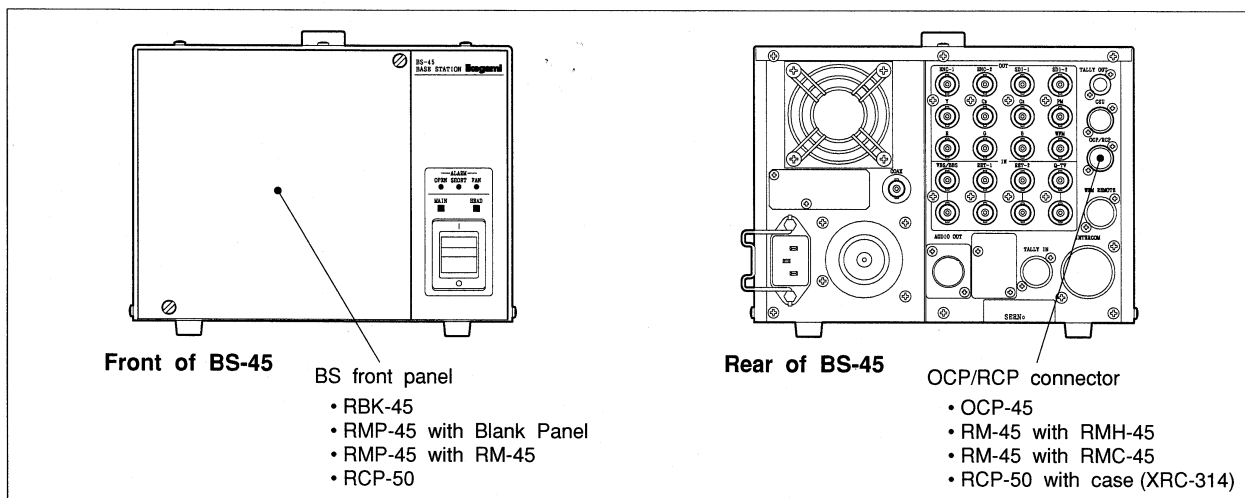
- The COAX connector of the TA-45 is order-optional. For a coaxial connection, it is necessary to supply DC power to the EXT DC IN connector of the rear of the TA-45.
- The minimum triax cable length used is 60 m.
Even when used in the shortest distance, use a triax cable of 60 m or more (ϕ 8.8).

3.6 Connection of Control Panels

For the front of the BS-45, the RBK-45, RMP-45 (with the blank panel or the RM-45) and RCP-50 can be installed as the BS front panel. Refer to “3.7 Installation of BS Front Panels” on the installation method.

For the rear of the BS-45, the OCP/RCP connector is attached and used to connect the OCP-45, RM-45 and RCP-50. Some functions of these control panels are unavailable because the HL-45/HL-45W does not have them.

In addition, operating condition of the camera head may become unstable due to combination of the control panels. This is because of the control priority of the control panels controlling the camera head. The condition will become stable by giving the control priority to one of the control panels. Refer to “4.2 Setting of Switches [Control Priority of Remote Control Panel]” on this setting.



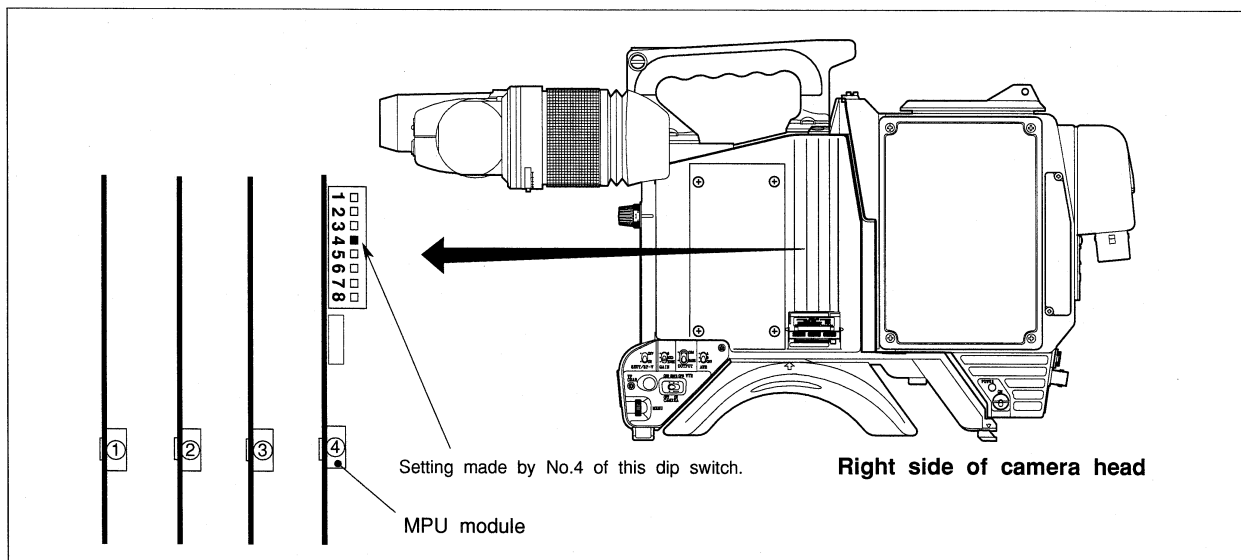
[Selection of Camera Head Command]

There are the HL command and the HC command in the HL-45/HL-45W systems. The TA-45, BS-45 and OCP-45 deal with the HL command to communicate with the HL-45/HL-45W. But, the TA-40, BS-40 and OCP-40 deal with the HC command. Therefore, according to the command, it is necessary to change the command setting in the HL-45/HL-45W.

- HL command : TA-45, BS-45, OCP-45, RM-45, RCP-50
- HC command : TA-40, BS-40, OCP-40, RCU-240

The selection is made with the No.4 position of the dip switch (S201) on the MPU module board in the HL-45/HL-45W. “ON” for the HL command, “OFF” for the HC command.

In addition, note the input/output command to the REMOTE connector on the left of the HL-45/HL-45W, as that command is changed at the same time.



3.7 Installation of BS Front Panels

On the front of the BS-45, the RBK-45, RMP-45 (with the blank panel or the RM-45) and RCP-50 can be installed as the BS front panel.



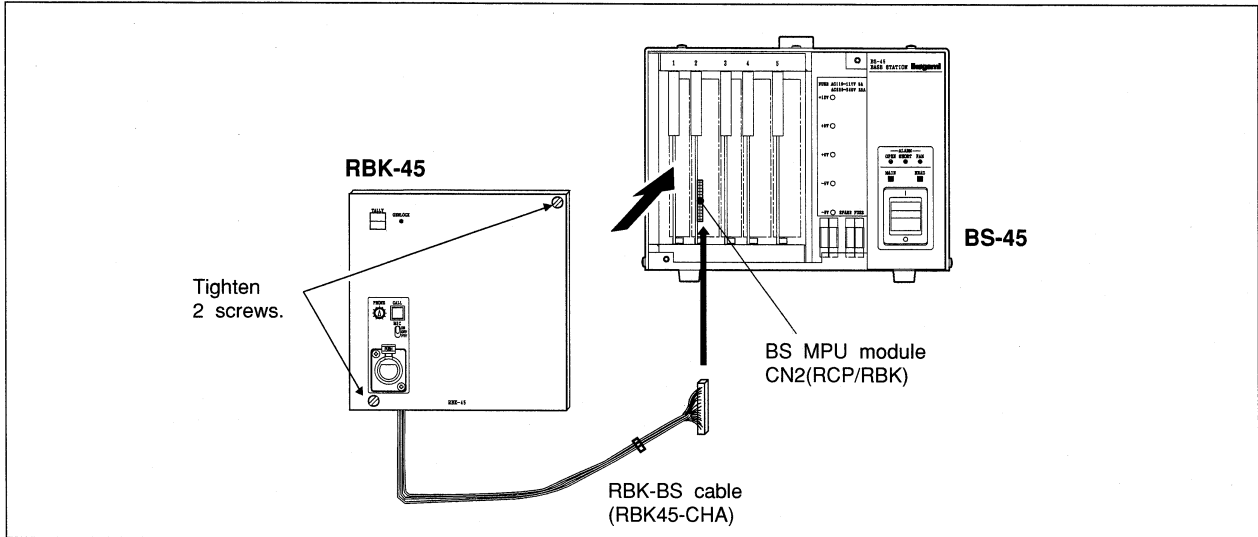
CAUTION

Be sure to turn off BS power before installation.

[Installation of RBK-45]

1. Connect the RBK-BS cable at the rear of the RBK-45 to CN2 on the BS MPU module in the BS-45.
2. Tighten two screws to fix the RBK-45 to the front of the BS-45.

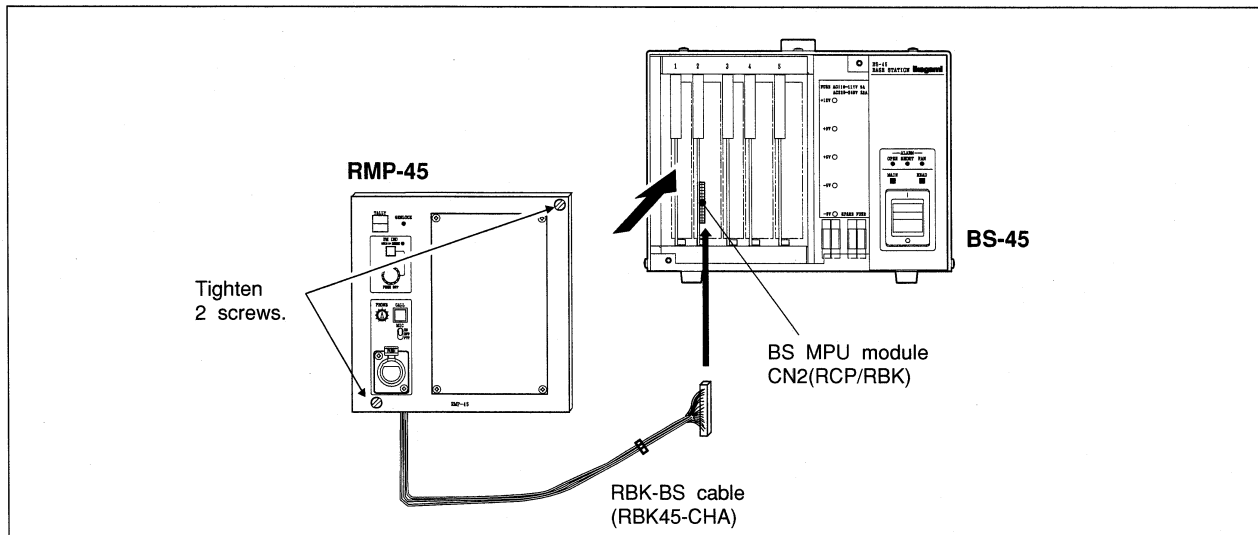
Note : Be careful not to damage the cable.



[Installation of RMP-45]

1. Connect the RBK-BS cable at the rear of the RMP-45 to CN2 on the BS MPU module in the BS-45.
2. Tighten two screws to fix the RMP-45 to the front of the BS-45.

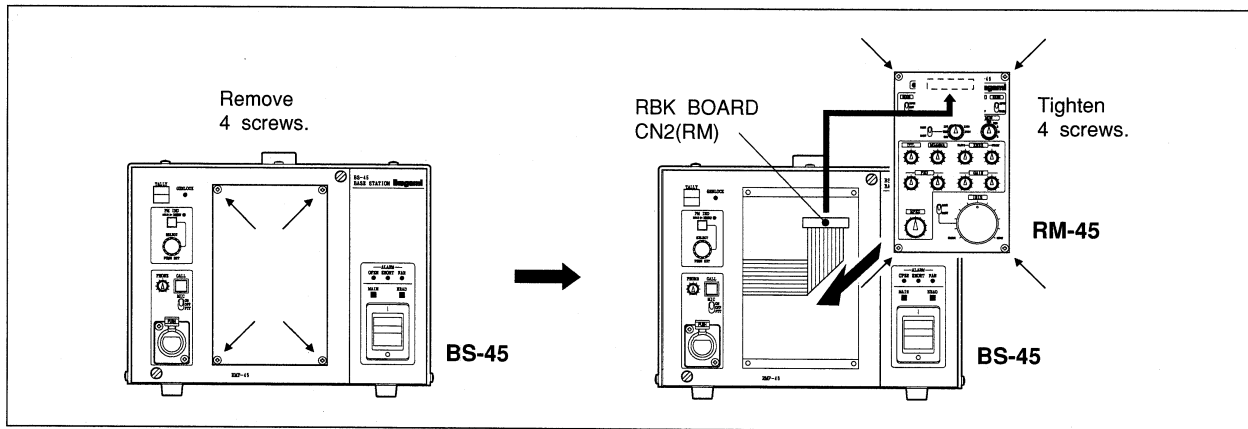
Note : Be careful not to damage the cable.



[Installation of RM-45 to RMP-45]

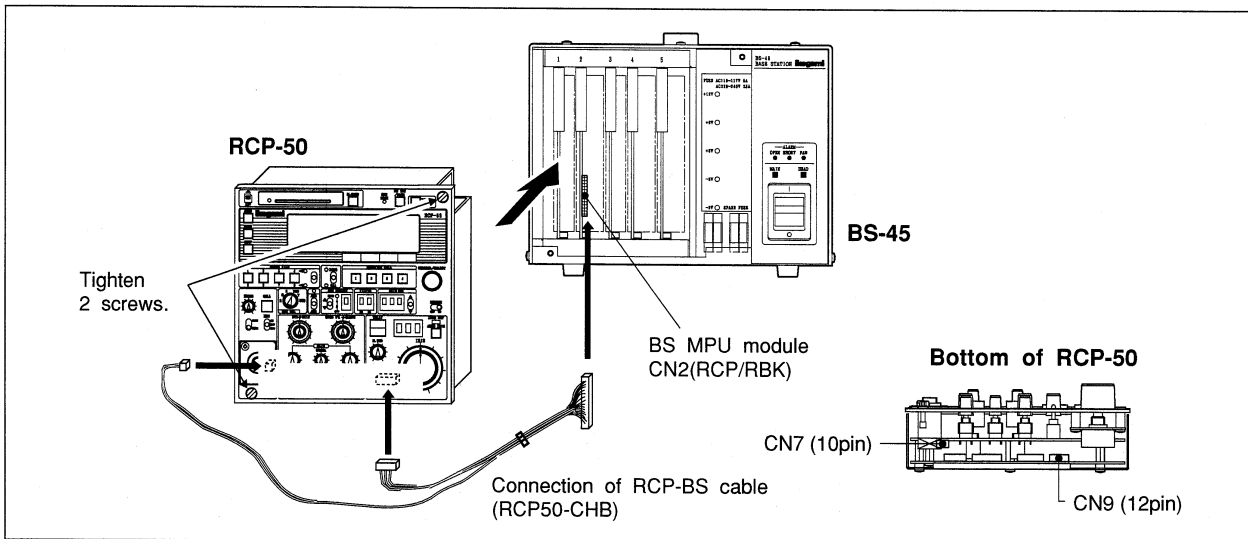
1. Remove four screws of the blank panel on the RMP-45 before removing the blank panel.
2. Connect the flat cable inside the RMP-45 to the connector at the rear of the RM-45.
3. Tighten four screws to fix the RM-45 to the front of the RMP-45.

Note : Be careful not to damage the cable.

**[Installation of RCP-50]**

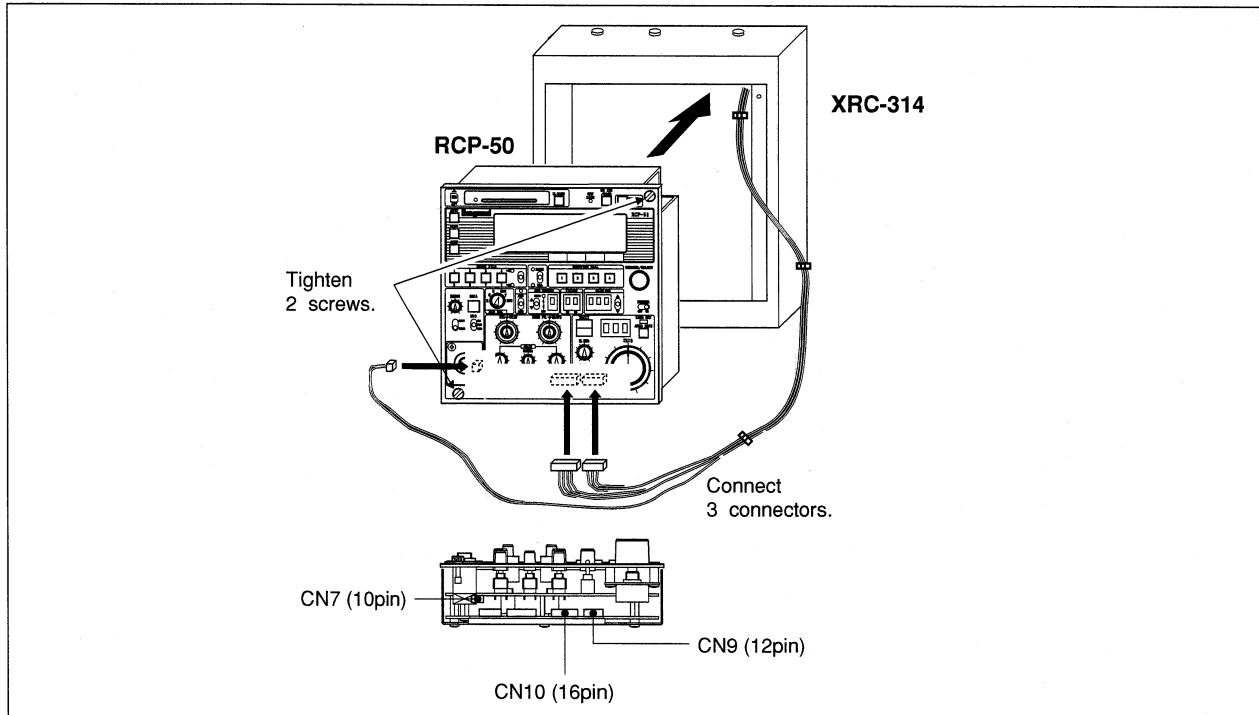
1. Connect one side of the RCP-BS cable to CN7 and CN9 of the RCP-50, and the other to CN2 on the BS MPU module in the BS-45.
2. Tighten two screws to fix the RCP-50 to the front of the BS-45.

Note : Be careful not to damage the cable.



[Installation of RCP-50 to Specified Setup Box (XRC-314)]

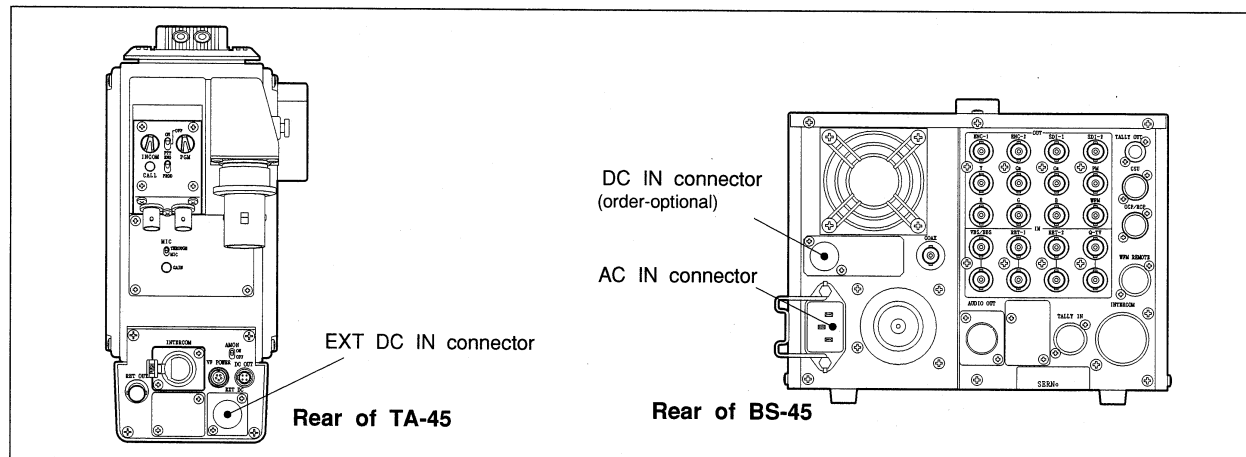
When the RCP-50 is used as a remote controller unit, it should be accommodated in specified setup box (XRC-314 : optional). By doing so, it can be connected directly to the REMOTE connector of the HL-45 and the OCP/RCP connector of the BS-45. Connect three connectors and then tighten two screws to fix the RCP-50.



3.8 Power Supply

It is unnecessary to supply power to the TA-45 when it is connected to the BS-45 with a triaxial cable. It is necessary to supply DC power to the EXT DC IN connector at the rear of it when it is connected to the BS-45 with a coaxial cable or when the camera head is used for self-contained operation.

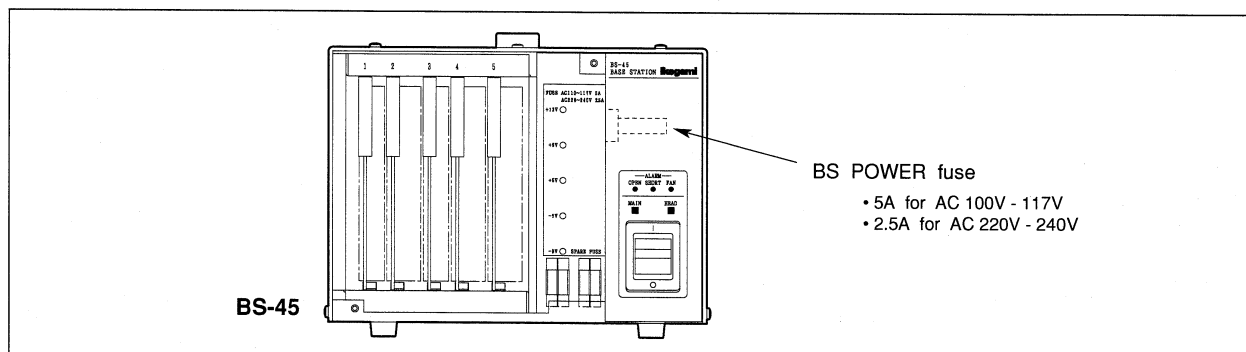
As for the BS-45, it is necessary to supply AC power to the AC IN connector at the rear of it. DC power supply is available for order-option.



[Fuse for BS]

Use a fuse with the specified rating inside the BS according to the AC input voltage. (AC 100V - 117V : 5A, AC 220V - 240V : 2.5A)

Refer to “3.7 Installation of BS Front Panels” on installing the BS front panel.

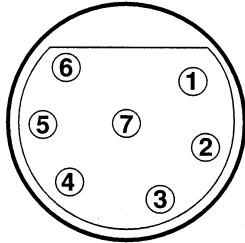


3.9 Pin Function of Connectors

[INCOM Connector (BS Front Panel), INTERCOM Connector (TA)]

• XLR-7 Type Connector

—— Receptacle ——


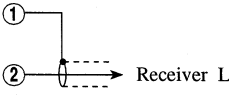

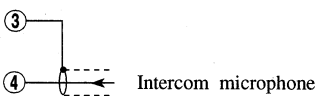

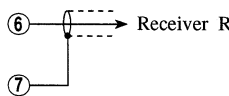



Insertion side

This is the connector to connect the headset for the intercom.

Body side : XLR - 7 - 31 - F77 (ITT Canon)

Cable side : XLR - 7 - 11C (7 pin male plug) or equivalent

Pin number	Name	Function	Direction	External interface
①	LISTEN L (C)	Shielding for intercom receiver L output (H) 	RET	
②	LISTEN L (H)	Intercom receiver L output (H)	OUT	
③	TALK (C)	Shielding for intercom microphone input (H) 	RET	
④	TALK (H)	Intercom microphone input (H)	IN	
⑤	COMM	COMM GND terminal 	GND	
⑥	LISTEN R (H)	Intercom receiver R output (H)	OUT	
⑦	LISTEN R (C)	Shielding for intercom receiver R output (H) 	RET	

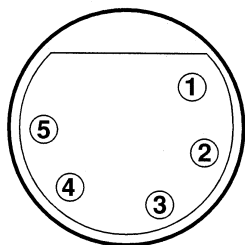
A carbon type headset and a dynamic type headset can be used as the intercom microphone.

As for the BS-45, setting of Carbon/Dynamic should be made by the switches (S3, S4) on the RBK BOARD.

As for the TA-45, setting was made to Dynamic by the J-BOARD. When using a carbon type headset, consult with your sales representative or local source.

• XLR-5 Type Connector

— Receptacle —



Insertion side

This is the connector to connect the headset for intercom.

Body side : XLR - 5 - 31 - F77 (ITT Canon)

Cable side : XLR - 5 - 12C (5 pin male plug) or equivalent

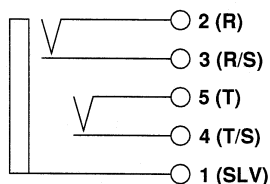
Pin number	Name	Function	Direction	External interface
①	TALK (C)	Shielding for intercom microphone input (H)	GND	
②	TALK (H)	Intercom microphone input (H)	IN	
③	SHIELD	Shielding for LISTEN Lch or LISTEN Rch output	GND	
④	LISTEN Lch (H)	LISTEN Lch output (H)	OUT	
⑤	PGM Rch (H)	PGM Rch output (H)	OUT	

A carbon type headset and a dynamic type headset can be used as the intercom microphone.

As for the BS-45, setting of Carbon/Dynamic should be made by the switches (S3, S4) on the RBK BOARD.

As for the TA-45, setting was made to Dynamic by the J-BOARD. When using a carbon type headset, consult with your sales representative or local source.

• 114B Jack



This is the connector to connect the headset for intercom.

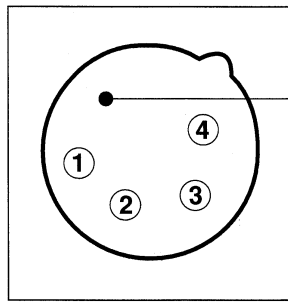
Body side : 114B (SWITCH CRAFT)

Cable side : 110 plug

Pin number	Name	Function	Direction	External interface
①	COMM	COMM GND terminal Connecting to SLV (sleeve) of plug	GND	
②	LISTEN L (H)	Intercom receiver output (H) Connecting to R (ring) of plug	OUT	
③	LISTEN L (C)	Termination with plug drawn	OUT	
④	TALK (C)	Termination with plug drawn	IN	
⑤	TALK (H)	Intercom microphone input (H) Connecting to T (tip) of plug	IN	

[DC IN Connector (BS), EXT DC IN Connector (TA)]

—— Receptacle ——



Insertion side

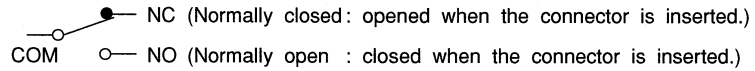
This is the connector to connect the external power supply (AC pack : ACP-26, etc.)

Body side : BS : XLR - RA - 4P (JAE)

TA : HA16RB-4P (SW) (Hirose)

Cable side : XLR - 4 - 11C (4 pin female plug) or equivalent

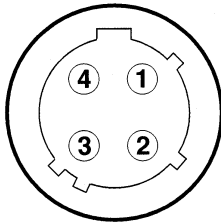
This connector is incorporated with the internal switch.



Pin number	Name	Function	Direction	External interface
①	+12 V RET	+12 V input RET	RET	
②	NC		—	
③	NC		—	
④	+12 V IN	+12 V input (11 V to 16 V)	IN	

[DC OUT Connector (TA)]

—— Receptacle ——



Insertion side

This is the connector to connect the external wireless receiver or the TALLY BOX.

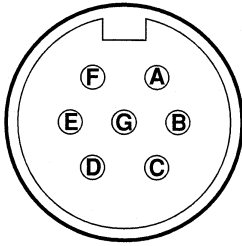
Body side : HR10A - 7R - 4SC (Hirose)

Cable side : HR10A - 7P - 4P (Hirose)

Pin number	Name	Function	Direction	External interface
①	+ 12 V RET	+ 12V RET	RET	
②	NC		—	
③	TALLY OUT	TALLY control output TALLY ON : GND, TALLY OFF : OPEN	OUT	
④	+ 12 V OUT	+ 12V output	OUT	

[TALLY IN Connector (BS)]

— Receptacle —



Insertion side

This is the connector to input the tally control signal.

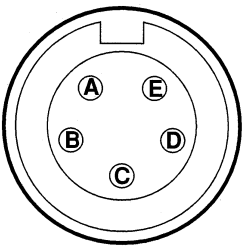
Body side : PRC 03 - 25A10 - 7M (Tajimi)**Cable side** : PRC 03 - 12A10 - 7F10.5 (7 pin female plug) or equivalent

Pin number	Name	Function	Direction	External interface
Ⓐ	R TALLY (+)	R TALLY input (+)	IN	
Ⓑ	G TALLY (+)	G TALLY input (+)	IN	
Ⓒ	R TALLY (-)	R TALLY input (-)	IN	
Ⓓ	G TALLY (-)	G TALLY input (-)	IN	
Ⓔ	NC	_____	—	
Ⓕ	NC	_____	—	
Ⓖ	GND	Ground for R and G TALLYs (+)	GND	

- Control DC voltage input is non-polar.
- For “MAKE”, either (1) or (2) can be used.
- The tally mode can be switched with S3 and S4 switches (POWER/MAKE SELECT) on the BS MPU module in the BS-45.

[TALLY OUT Connector (BS)]

— Receptacle —



Insertion side

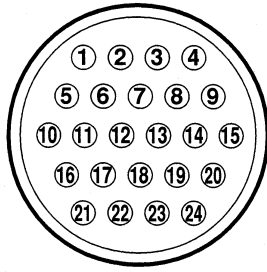
This is the connector to output the tally control signal.

Body side : PRC 05 - RB5F1 (Tajimi)**Cable side** : PRC 05 - P5M (5 pin male plug) or equivalent

Pin number	Name	Function	Direction	External interface
Ⓐ	+12 V OUT	+12 V power output	OUT	
Ⓑ	R TALLY	R TALLY output	OUT	
Ⓒ	NC	_____	—	
Ⓓ	G TALLY	G TALLY output	OUT	
Ⓔ	TALLY GND	Ground for TALLY	GND	

[INTERCOM Connector (BS)]

—— Receptacle ——



Insertion side

This is the connector to connect the external intercom system.

Body side : TRC01-25SR24MA-PC (Tajimi)

Cable side : TRC01-25P24FA (24 pin female plug) or equivalent

Pin number	Name	Function	Direction	External interface
①	PROD BS → L (H)	PROD CAM → LINE (+) / PROD RTS	IN OUT	
②	PROD BS → L (C)	PROD CAM → LINE (-)	IN OUT	
③	PROD L → BS (H)	PROD CAM ← LINE (+)	IN	
④	PROD L → BS (C)	PROD CAM ← LINE (-)	IN	
⑤	SHIELD	Shield for PROD line (1 pin to 4 pin)	GND	
⑥	ENG BS → L (H)	ENG CAM → LINE (+) / ENG RTS	IN OUT	
⑦	ENG BS → L (C)	ENG CAM → LINE (-)	IN OUT	
⑧	ENG L → BS (H)	ENG CAM ← LINE (+)	IN	
⑨	ENG L → BS (C)	ENG CAM ← LINE (-)	IN	
⑩	SHIELD	Shield for ENG line (6 pin to 9 pin)	GND	
⑪	NC	———	—	
⑫	NC	———	—	
⑬	PGM-1 IN (H)	PGM-1 line (H)	IN	
⑭	PGM-1 IN (C)	PGM-1 line (C)	IN	
⑮	SHIELD	Shield for PGM-1 line (13 pin, 14 pin)	GND	

Pin number	Name	Function	Direction	External interface
16	NC	_____	—	
17	NC	_____	—	
18	NC	_____	—	
19	REMOTE ISOLATE OFF	REMOTE ISOLATE ON / OFF OFF : OPEN, ON : GND	IN	
20	EXT MIC OFF	HEAD INCOM MIC OFF	IN	
21	SWITCHABLE ENABLE	Aspect ratio selection Permission : GND, Prohibition : OPEN	IN	
22	16 : 9 ON	Aspect ratio selection (21st pin : GND) 16:9 : GND, 4:3 : OPEN	IN	
23	NC	_____	—	
24	NC	_____	—	

- Use ENG line if the external line is a single line.
- All the signals of the intercom line to the external system are delivered with 0 dBm, 600 ohm.

Set the following switches of the BS INCOM module in the BS-45 according to the intercom system.

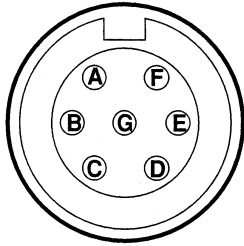
	S2, 3, 5, 6 (4W <-> RTS)	S1, 4 (DUMMY ON <-> OFF)
4W	Set to "4W"	Set to "ON"
RTS	Set to "RTS"	Set to "OFF"

Notice

The 2W intercom system is unavailable.

[WFM REMOTE Connector (BS)]

—— Receptacle ——



Insertion side

This is the connector to output the stair waveform for the waveform monitor.

Body side : PRC 03 - 25A10 - 7F (Tajimi)

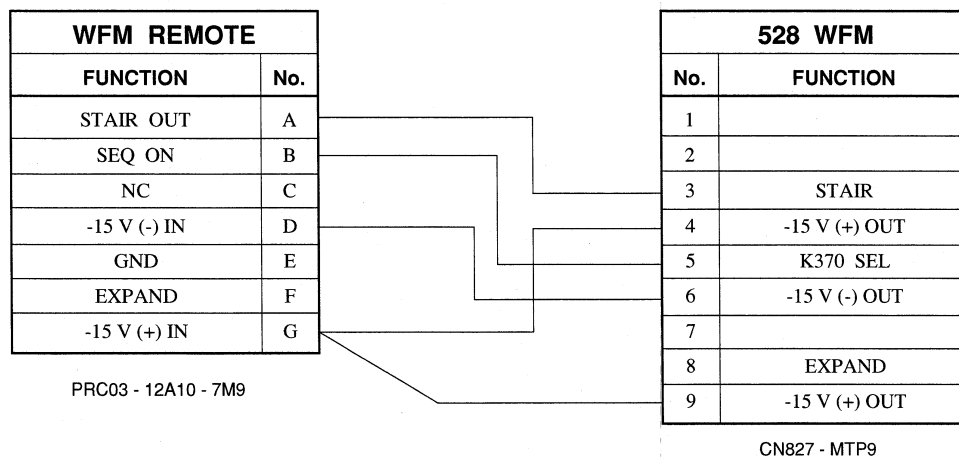
Cable side : PRC 03 - 12A10 - 7M9 (7 pin male plug) or equivalent

Pin number	Name	Function	Direction	External interface
(A)	STAIR OUT	Stair signal output	OUT	(A) →
(B)	SEQ ON	Control signal output for selecting SEQ	OUT	
(C)	NC		—	
(D)	-15 V (-) IN	-15 V input	IN	
(E)	GND	Ground for WFM control	GND	(E) —
(F)	EXPAND		—	
(G)	-15 V (+) IN	-15 V RET	RET	

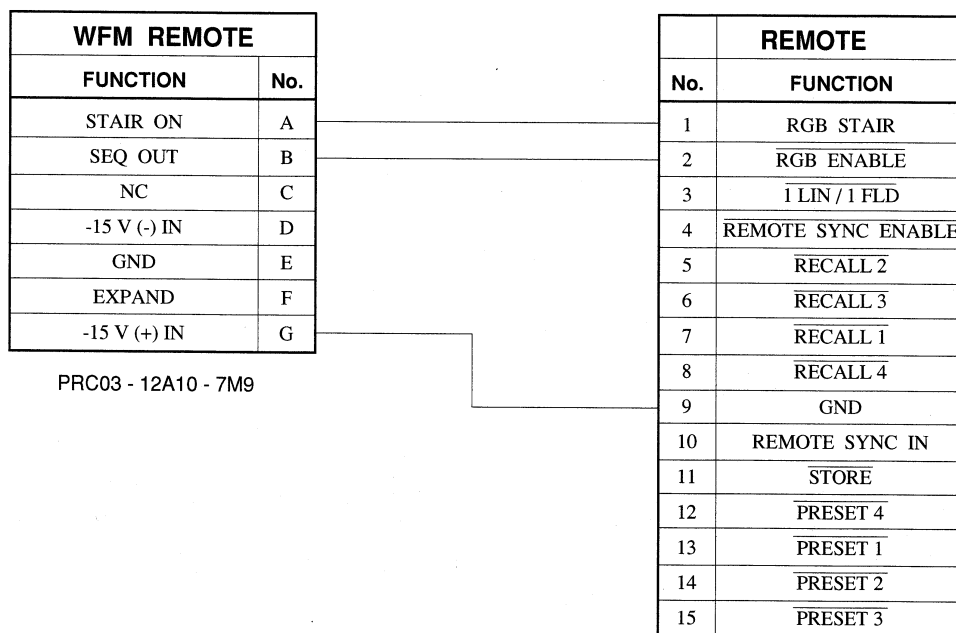
The external connection depends on the waveform monitor to be used. Typical cable connection of the waveform monitor is shown below.

Switch S4 (WFM TYPE : 17XX/528) on the MONITOR module in the BS-45 should be switched according to the waveform monitor to be used. In addition, the level of the stair waveform should be adjusted with controls (VR54 LEVEL, VR55 POSITION) on the MONITOR module.

• **528A**

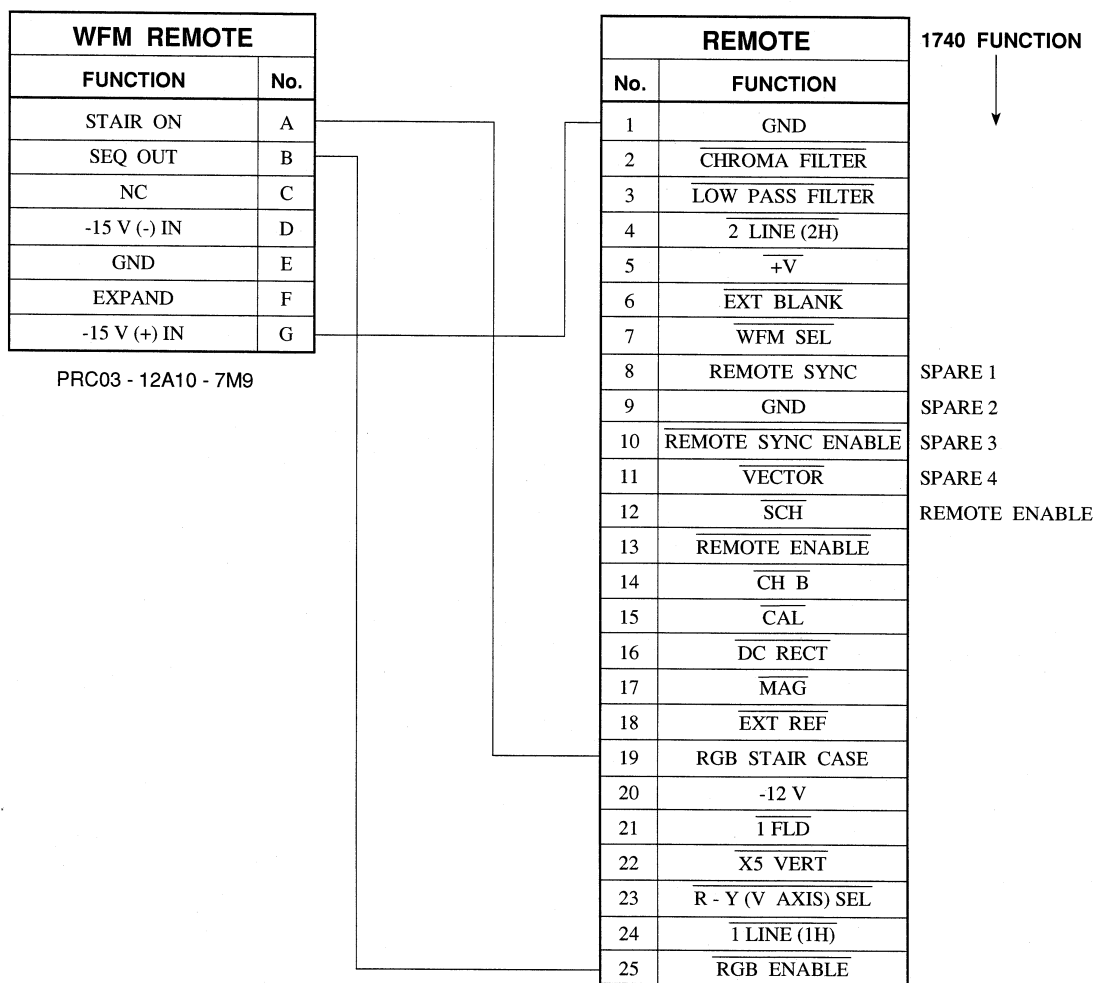


• 1730/1731



DA - 15P : JAE or AMP
 DA - CI - J10 - 36 (HOOD) : JAE
 or 206471-1 (HOOD) : AMP

• 1740/1741/1750/1751



DB - 25S - N
 DB - C2 - J9 - S6 (HOOD)
 (DB - 25P)

• 1740A/1750A

WFM REMOTE	
FUNCTION	No.
STAIR ON	A
SEQ OUT	B
NC	C
-15 V (-) IN	D
GND	E
EXPAND	F
-15 V (+) IN	G

PRC03 - 12A10 - 7M9

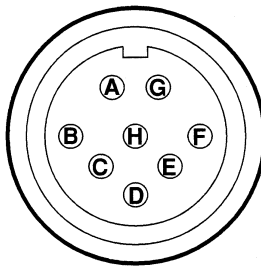
REMOTE	
No.	FUNCTION
1	RGB/YRGB STAIR CASE
2	GND
3	STAIR CASE/EXT
4	EXT BLANK IN
5	REMOTE SYNC IN
6	REMOTE SYNC ENABLE
7	GND
8	+Y AUDIO IN
9	-Y AUDIO IN
10	-X AUDIO IN
11	+X AUDIO IN
12	+TIME CODE IN

REMOTE	
No.	FUNCTION
13	-TIME CODE IN
14	GND
15	NC
16	NC
17	PRESET1
18	PRESET2
19	PRESET3
20	PRESET4
21	PRESET5
22	PRESET6
23	PRESET7
24	PRESET8
25	STORE

DB - 25P - N
 DB - C8 - J10 - B2-1 (HOOD)
 (DB - 25S)

[CSU Connector, OCP/RCP Connector (BS)]

— Receptacle —



Insertion side

This is the connector for the external remote control panel.

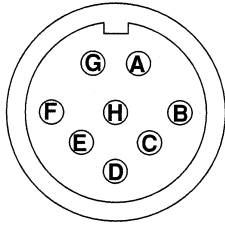
Body side : PRC 05 - RB8FI (Tajimi)

Cable side : PRC 05 - PB8M (8 pin male plug)

Pin number	Name	Function	Direction	External interface
Ⓐ	HED (+)	Digital data output (+) from camera head to remote controller	OUT	
Ⓑ	HED (-)	Digital data output (-) from camera head to remote controller	OUT	
Ⓒ	HEC (+)	Digital data input (+) from remote controller to camera head	IN	
Ⓓ	HEC (-)	Digital data input (-) from remote controller to camera head	IN	
Ⓔ	+ 12 V (REM)	DC + 12 V power supply to remote controller	OUT	
Ⓕ	+ 12 V RET (REM)	Ground for DC + 12 V power supply	RET	
Ⓖ	REM LISTEN	Audio input for intercom from remote controller	IN	
Ⓗ	REM TALK	Audio output for intercom to remote controller	OUT	

[COMMAND Connector (OCP)]

—— Receptacle ——



Insertion side

This is the connector to input and output various control signals to the BS.

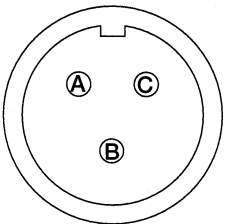
Body side : PRC05 - R8M (Tajimi)

Cable side : PRC90 - 199P9 - 8F (8 pin female plug)

Pin number	Name	Function	Direction	External interface
Ⓐ	HED RX (+)	Digital data input (+) from BS to control panel	IN	
Ⓑ	HED RX (-)	Digital data input (-) from BS to control panel	IN	
Ⓒ	HEC TX (+)	Digital data output (+) from control panel to BS	OUT	
Ⓓ	HEC TX (-)	Digital data output (-) from control panel to BS	OUT	
Ⓔ	+ 12 V	DC + 12 V power input from BS	IN	
Ⓕ	+ 12 V RET	Ground for DC + 12 V power input from BS	RET	
Ⓖ	INCOM TALK	Intercom audio signal output to BS	OUT	
Ⓗ	INCOM RECEIVE	Intercom audio signal input from BS	IN	

[VF POWER Connector (TA)]

—— Receptacle ——



Insertion side

This is the connector to output power to 6-inch VF.

Body side : PRC05 - R3F (Tajimi)

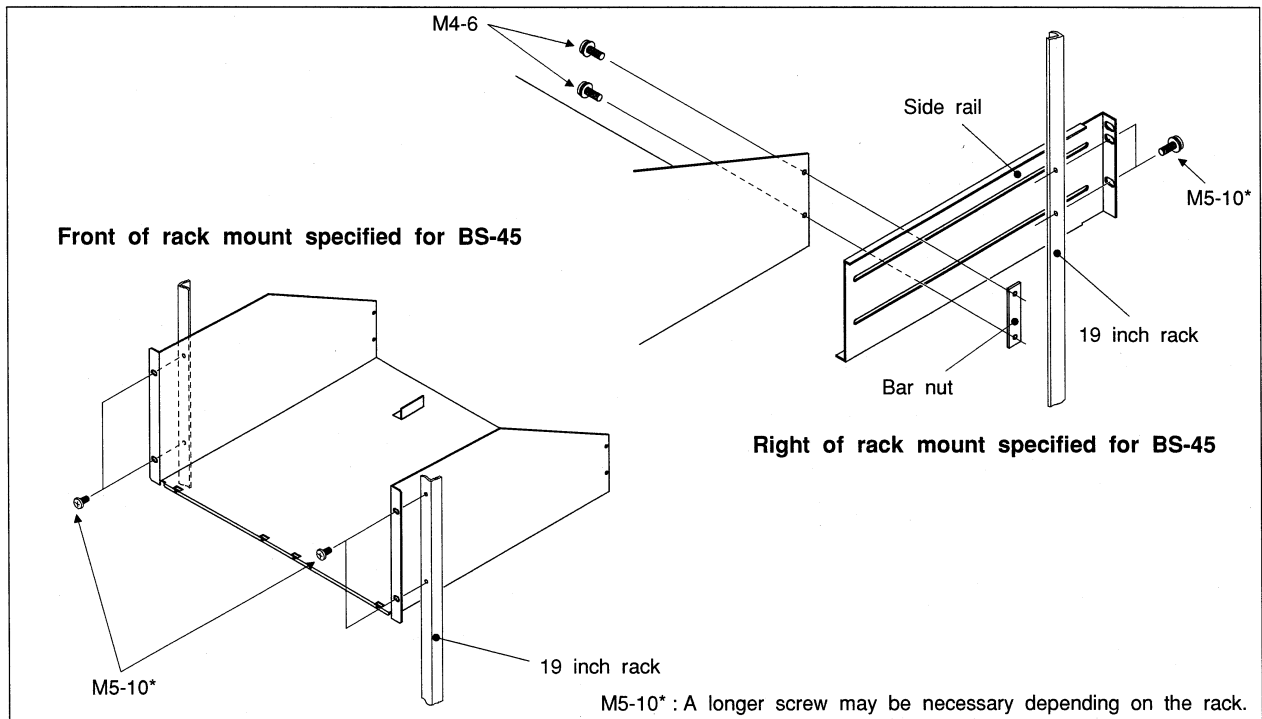
Cable side : PRC05 - P3M (3 pin male plug)

Pin number	Name	Function	Direction	External interface
Ⓐ	+ 12 V	+ 12 V output	OUT	
Ⓑ	+ 12 V RET	+ 12 V output RET	RET	
Ⓒ	COMM	COMM GND terminal	GND	

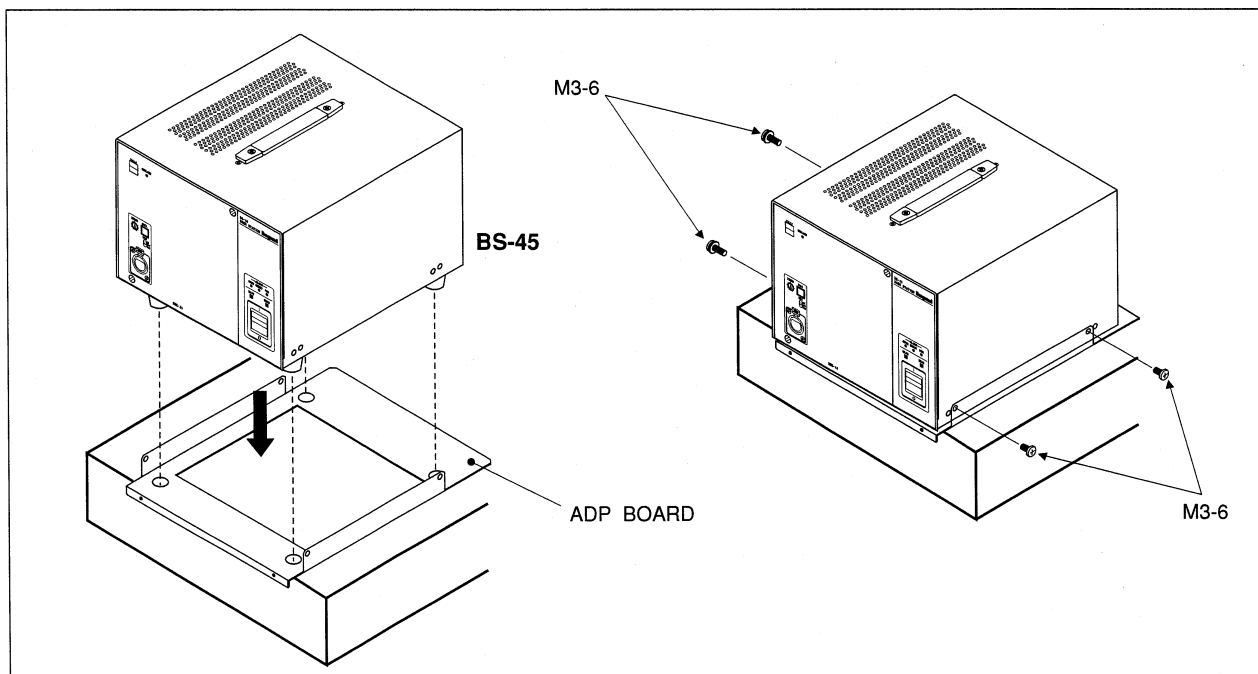
3.10 Installation of Rack Mount Adaptor

[Rack Mount Adaptor Specified for BS-45]

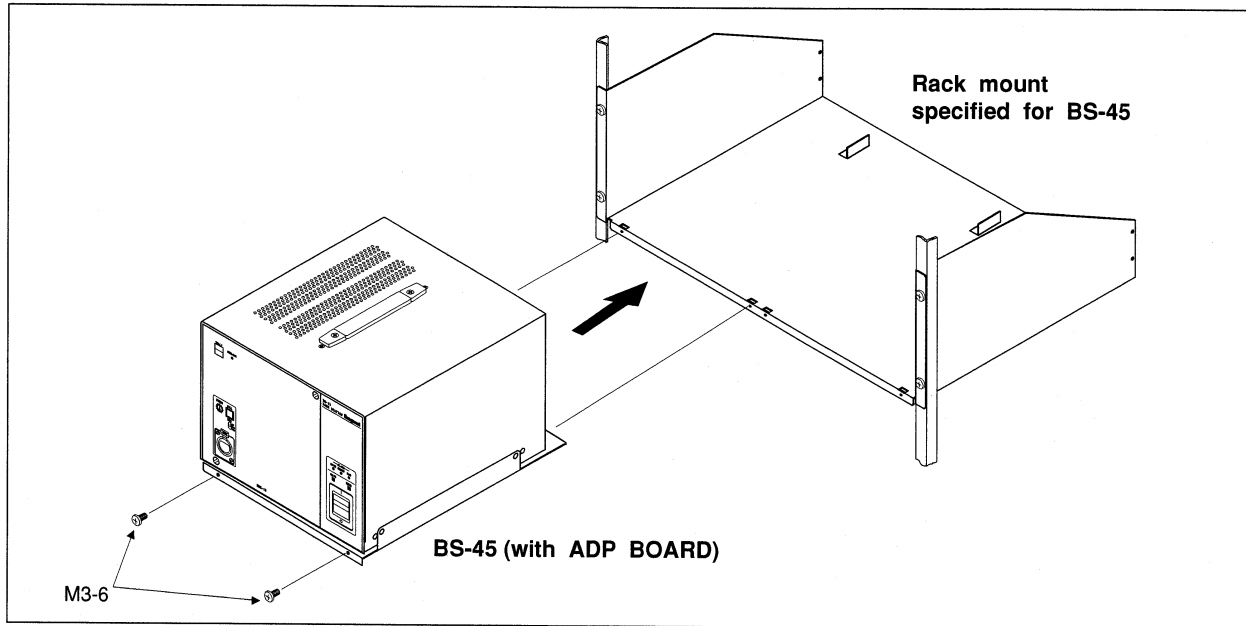
1. Fix the front of the rack mount adaptor with 4 screws.
2. Fix the side rail with 2 screws.
Both the right and left sides should be done.
3. Fix the rack mount adaptor with the side rail with 2 screws and the bar nut.
Both the right and left sides should be done.



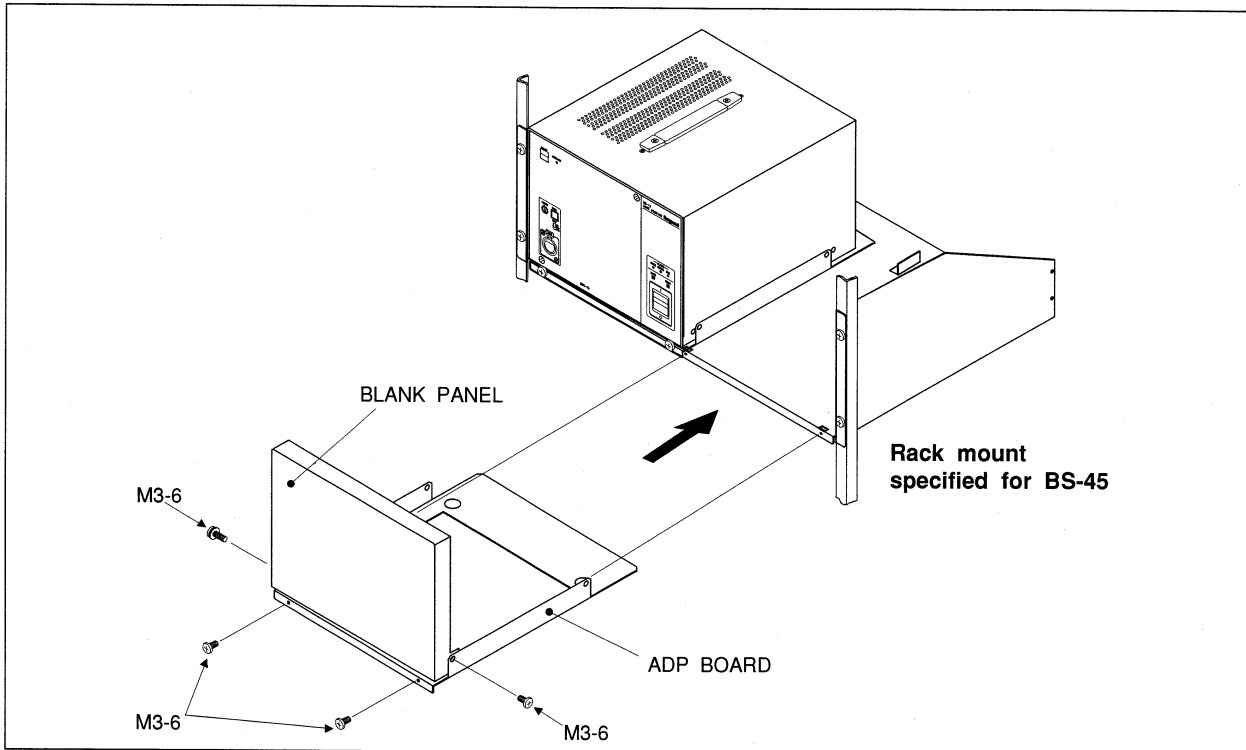
4. Fix the ADP BOARD at the bottom of the BS-45 with 4 screws.



5. Fix the BS-45 (with ADP BOARD) in the rack mount adaptor with 2 screws.

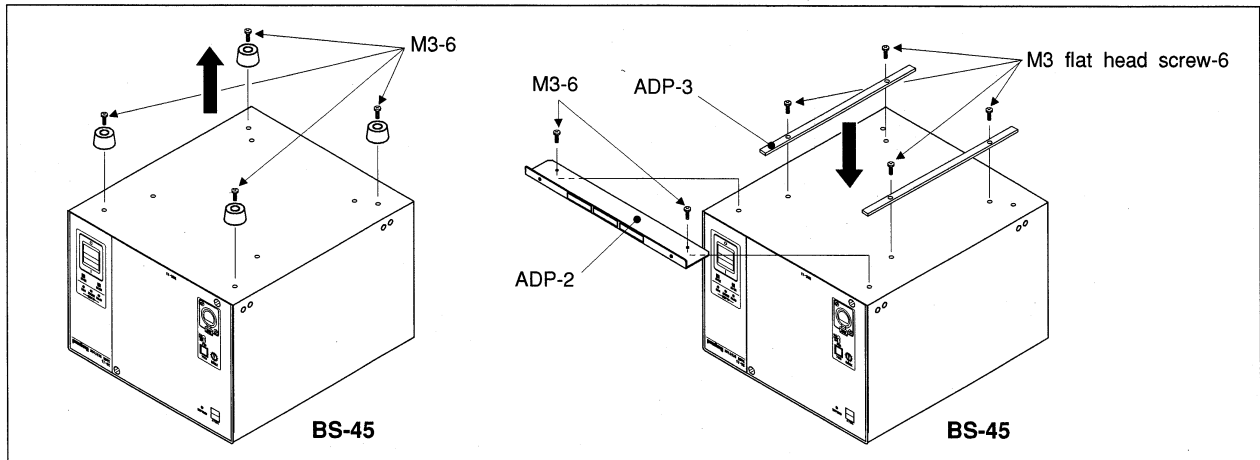


6. When installing the BLANK PANEL, fix the BLANK PANEL with the ADP BOARD with 2 screws.
7. Fix it in the rack mount adaptor with 2 screws.

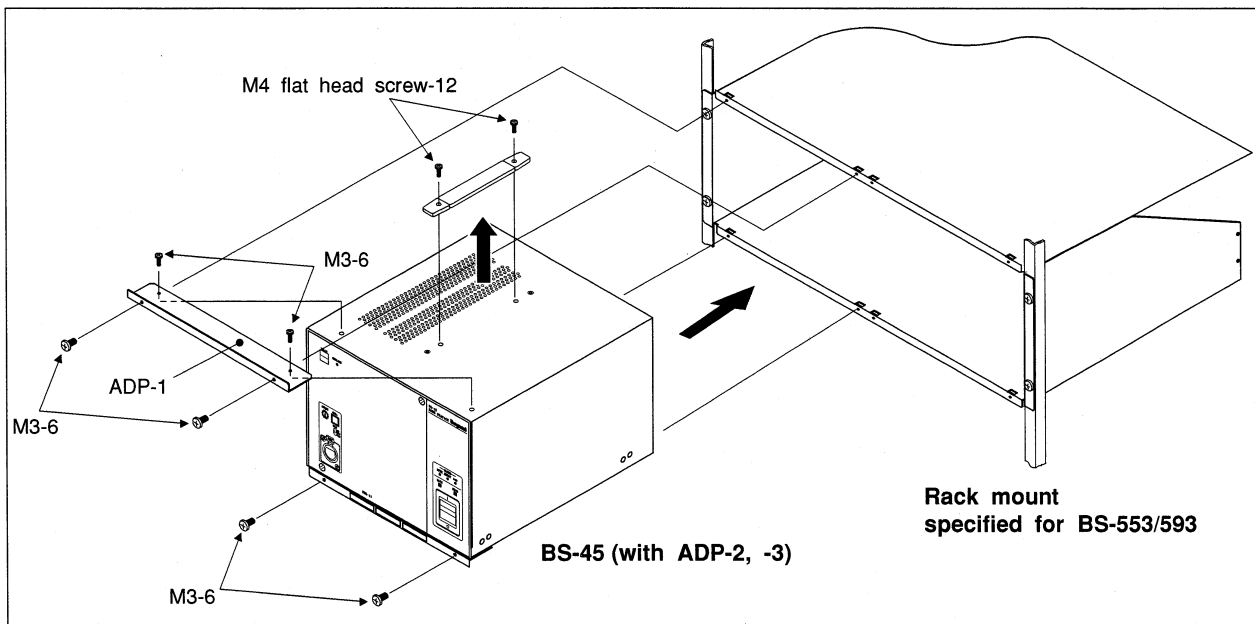


[Rack Mount Adaptor Specified for BS-553/593]

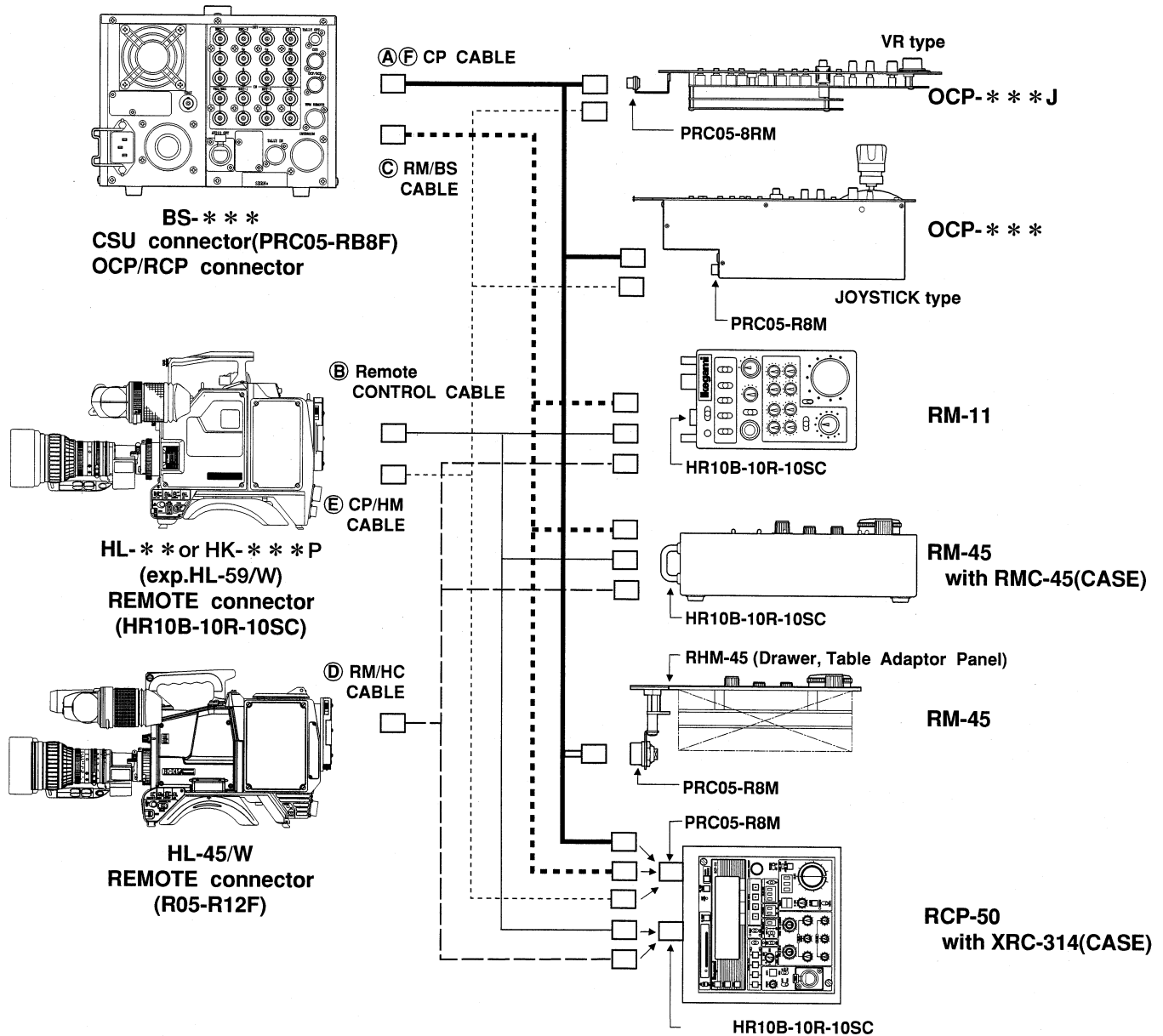
1. Remove 4 feet at the bottom of the BS-45.
2. Fix 2 ADP-3s at the bottom of the BS-45 with 4 screws.
3. Fix the ADP-2 at the bottom of the BS-45 with 2 screws.



4. Remove the handle at the top of the BS-45.
5. Fix the ADP-1 at the top of the BS-45 with 2 screws.
6. Fix the BS-45 (with ADP-1, -2, -3) in the rack mount adaptor with 4 screws.



3.11 Remote Cable Diagram



<NOTICE>

- The remote cable cannot be connected to RM-45 or RCP-50 without case and adaptor.
- Harness (RCP50-CHB) is necessary when RCP-50 is installed in the BS-45.

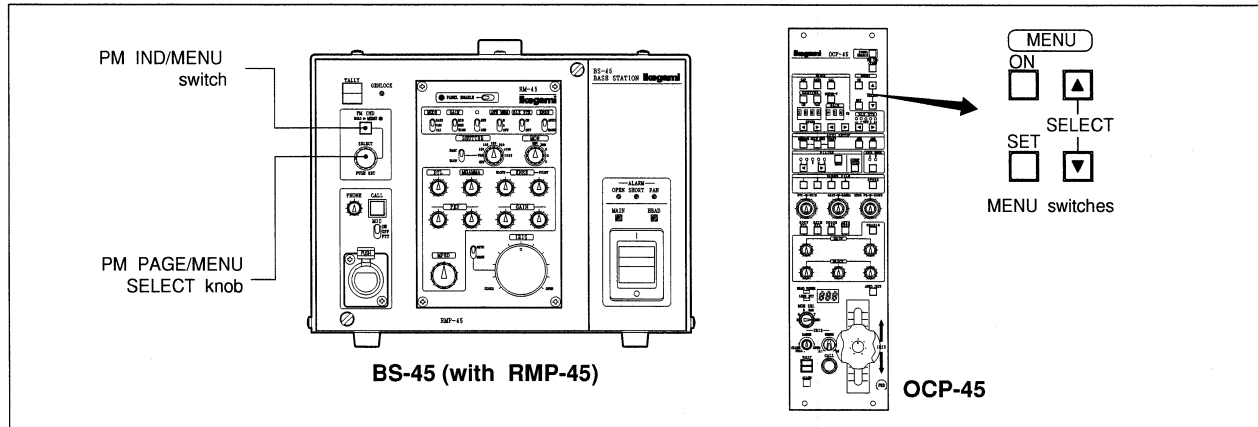
Cable Name	Connector Name		Note
	BS/HEAD SIDE	PANEL SIDE	
(A) CP CABLE RCC-274	PRC05-PB8M	↔ PRC05-PB8F	standard
(B) REMOTE CONTROL CABLE RCC-194	HR10B-10PA-10PC	↔ HR10B-10PA-10PC	standard
(C) RM/BS CABLE RCC864-003, 005, 010	PRC05-PB8M	↔ HR10B-10PA-10PC	special
(D) CP/HM CABLE RCC-284	HR10B-10PA-10PC	↔ PRC05-PB8F	special
(E) CP CABLE (S) RCC854-003, 005, 010	PRC05-PB8M	↔ PB8F	special

4. Setting of Switches

4.1 BS Menu

The menu specified for the BS-45 is provided.

(1) Basic Operation



[Top Main Menu Display]

< For BS-45 (RMP-45) >

Pressing the PM IND/MENU switch on the front of the BS for more than 2 seconds allows the MENU mode.

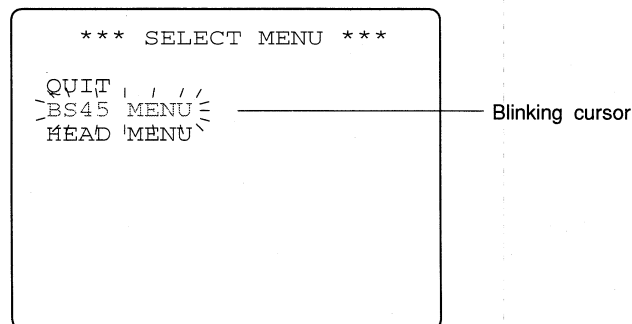
< For OCP-45 >

Pressing the MENU ON switch on the OCP-45 allows the MENU mode.

The top main menu as shown below appears.

- **BS45 MENU** : Menu specified for the BS-45
- **HEAD MENU** : Camera head menu (See HL-45/HL-45W Operation Manual.)

Note : When "HEAD MENU" is selected, characters are superimposed on not only PM output but also video outputs.



[Blinking Cursor]

The selected item will blink. This blinking is hereafter called "blinking cursor".

[Selection and Decision]

Representation "Select and decide" in the menu operation hereafter appears. The operation is as follows.

< For BS-45 (RMP-45) >

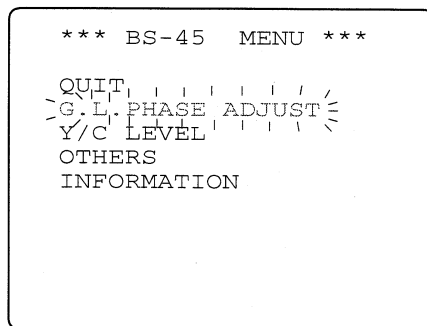
- **Select** : Turn the PM PAGE/MENU SELECT knob to move the blinking cursor to the desired item of the menu, or to change the condition setting item of ON/OFF, etc..
- **Decide** : Press the PM PAGE/MENU SELECT knob to decide the blinking item.

< For OCP-45 >

- **Select** : Press the SELECT switches (UP, DOWN) of the MENU switches to move the blinking cursor to the desired item of the menu, or to change the condition setting item of ON/OFF, etc..
- **Decide** : Press the SET switch of the MENU switches to decide the blinking item.

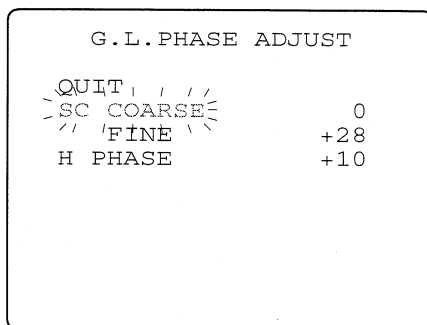
[Main Menu Display]

Select and decide "BS45 MENU" in the top main menu. The main menu as shown below appears in the picture monitor screen.

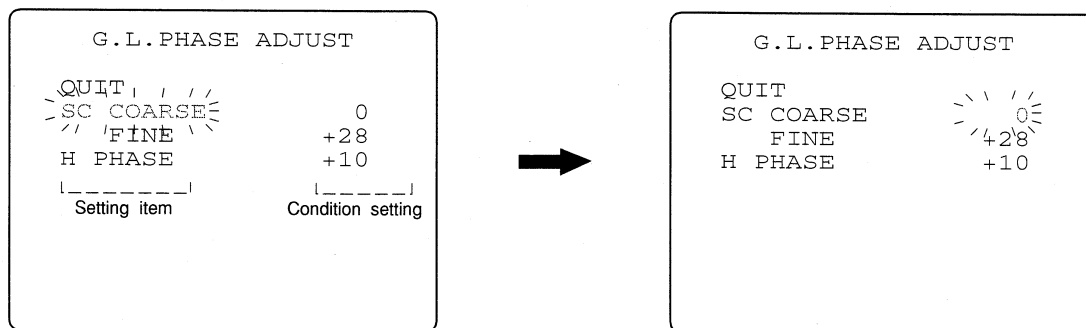
**[Sub Menu Display]**

Select and decide the desired item in the main menu.

The menu automatically changes to the sub-menu, and details of the selected item can be set there.

**[Condition Setting]**

Select and decide the desired item (setting item) in the sub-menu. The blinking cursor will move to the condition setting. Then, select and decide the condition setting item.

**[Completion of Menu]**

To exit from the MENU mode, press the PM IND/MENU switch <BS-45 (RMP-45)> or MENU ON switch <OCP-45>.

(2) Description of BS Main Menu

Main menu	Sub menu	Function
G.L.PHASE ADJUST	SC COARSE FINE H PHASE	Coarse adjustment of sub-carrier phase Fine adjustment of sub-carrier phase Phase adjustment of horizontal deflecting signal
Y/C LEVEL	Y LEVEL CHROMA	Y level adjustment Chrominance level adjustment
OTHERS	ASPECT IND	ON/OFF of aspect ratio display
INFORMATION	MPU MODULE SW ROM VERSION	Setting state display of dip switch on the BS MPU module ROM version display

Notice

"QUIT" is displayed as the first item of each sub-menu although it is omitted in the table above. When "QUIT" is selected and decided, the BS main menu will appear.

[G. L. PHASE ADJUST]

Input the reference signal (black burst or composite video signal) to the GENLOCK IN connector (BNC type) on the BS when the BS is genlocked to be phase-matched to synchronizing signal of the external system.

Then, make coarse ("SC COARSE") and fine ("FINE") adjustments of the sub-carrier (SC) signal phase of the BS, and adjustment ("H PHASE") of the horizontal synchronizing signal phase.

G. L. PHASE ADJUST

QUIT

SC COARSE 0

 FINE +28

H PHASE +10

[Y/C LEVEL]

Make adjustment of the Y/C level.

Y/C LEVEL

QUIT

Y LEVEL 0

CHROMA 0

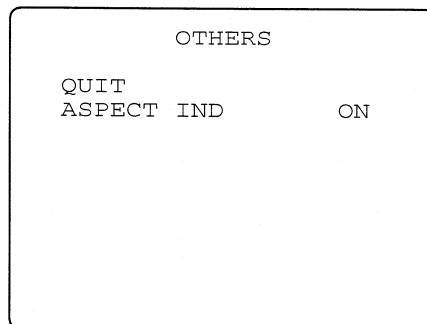
[OTHERS]

The character information appears in the picture monitor screen in 16:9 mode with “ASPECT IND” “ON”.

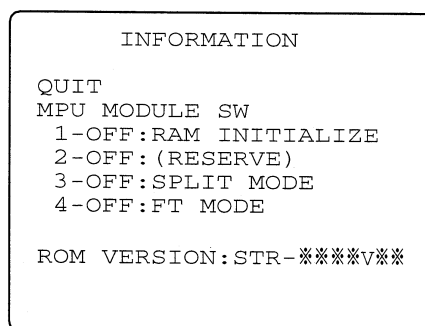
- **4:3 mode** : No mode displaying
- **16:9 mode** : [16:9] displaying

Notice

“[16:9]” does not appear only in the DIAGNOS INFO (1/2) page.

**[INFORMATION]**

The setting state of the dip switch on the BS MPU module, and the ROM version is displayed.



*****V** indicates the built-in ROM version.

Refer to “4.2 Setting of Switches [Control Priority of Remote Control Panel]” about the dip switch setting for “SPLIT MODE” in the “MPU MODULE SW”.

4.2 Setting of Switches

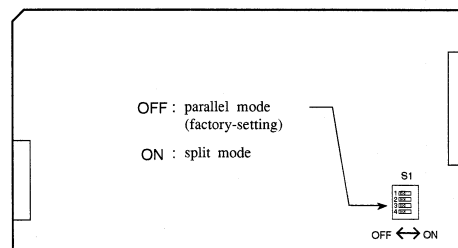
The effective use of the BS-45, TA-45 and OCP-45 may need the following switch setting.

[Control Priority of Remote Control Panel]

In controlling levels of GAIN, GAMMA and so on from a remote control panel, a potentiometer is used for the RCP-50, OCP-45 and RM-45 (absolute control), but a rotary encoder is used for the MCP (relative control). So, the control range of the potentiometer can be altered by the rotary encoder.

For one control item, if the absolute control is performed from remote control panels connected to the BS-45 at the same time, the camera may exhibit level fluctuation during operation because each data is output as absolute value. In order to prevent such a trouble from occurring, only one of the remote control panels is enabled at a time. This is called the split mode. On the other hand, the control can be done simultaneously by remote control panels. This is called the parallel mode.

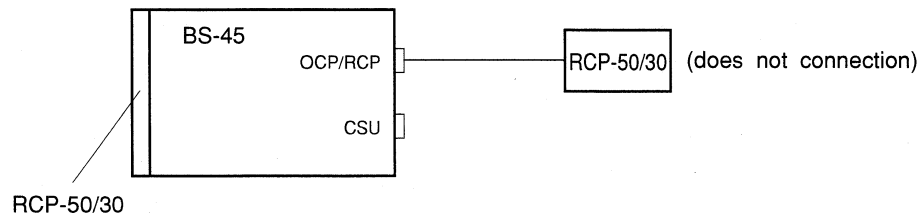
Switching between parallel mode and split mode can be accomplished with #3 of a dip switch S1 on the BS MPU module inside the BS-45.

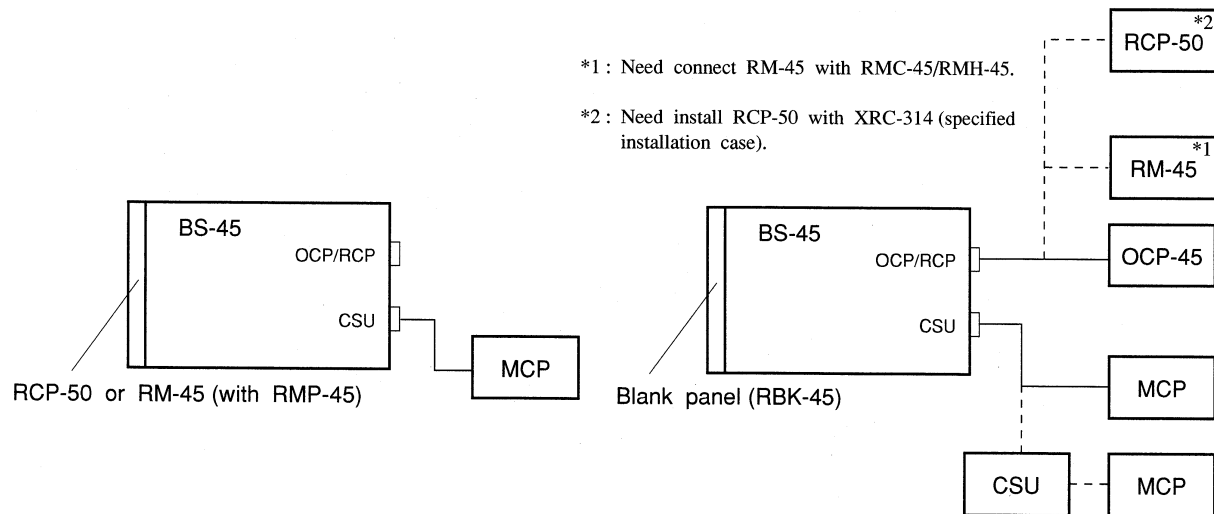


- **Parallel mode** : The control can be made from all the remote control panels connected to the BS-45.
- **Split mode** : One of remote control panels connected to the BS-45 can be enabled (only one at a time). Moving control priority can be accomplished by pressing the PANEL ENABLE switches of the remote control panels.

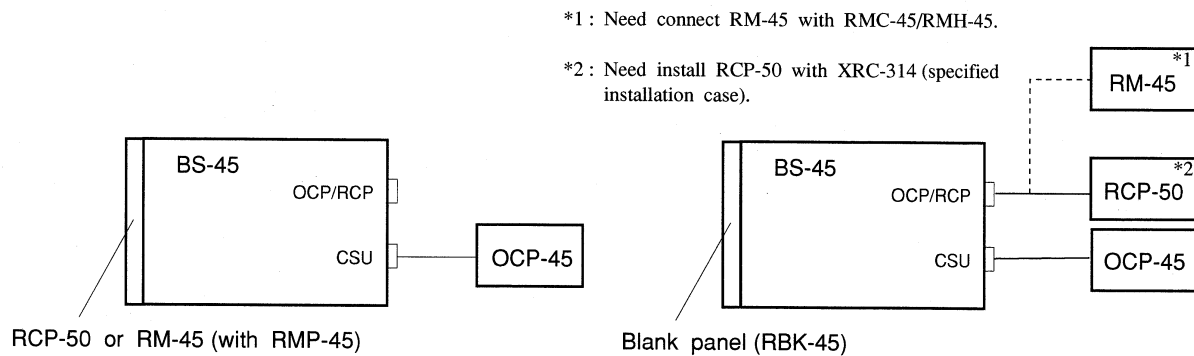
Notice

When RCP-50/30 is connected in the BS front RCP-50/30 is not able to be connected OCP/RCP connector of the rear.



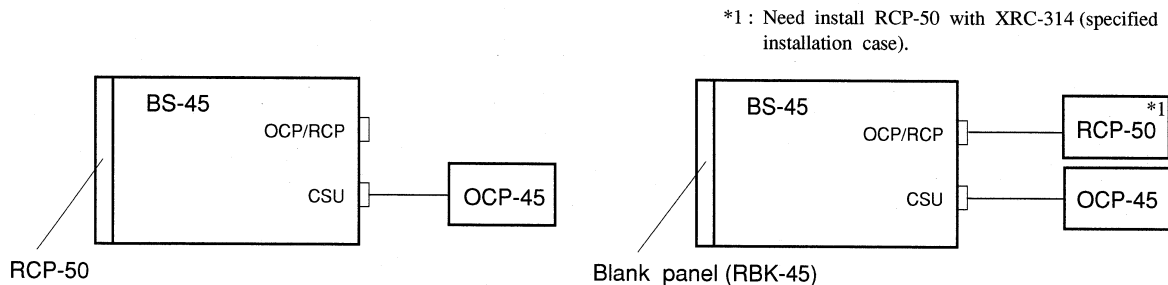
Example (1) Parallel Mode and Split Mode

The OCP-45 (or RCP-50 or RM-45) and MCP (Maintenance Control Panel) can be used in both the parallel mode and split mode. Turning “OFF” the PANEL ENABLE switch of the OCP (camera select switches for the MCP) makes control impossible, so turn “ON” before use.

Example (2) Split Mode

The RCP-50 (or RM-45) and OCP-45 can be used in the split mode.

With the above figure, it is possible to control from either RCP-50 (or RM-45) or OCP-45. Moving control priority can be accomplished by pressing the PANEL ENABLE switch on the remote control panel. For the RM-45, press the PANEL ENABLE switch down to the left as shown by an arrow. It is impossible for the RM-45 to move control priority from the RM-45 to the other remote control panel. In such case, press the PANEL ENABLE switch of the other remote control panel to which control should be moved.

Example (3) Parallel Mode

The RCP-50 and OCP-45 can be used in the parallel mode.

In case of the above figure, when setting the switch #1 of S1 (dip switch) on the RCP-50 CONT BOARD to "ON", it is possible to control from both RCP-50 and OCP-45. In the parallel mode, it is not possible to control from potentiometers and the AUTO IRIS switch on the RCP-50, excepting the other switches, rotary encoders and liquid crystal touch panel.

Setting the switch #1 of S1 to "OFF" and operating in the parallel mode in the above connection, if both remote control panels have the same function potentiometer, makes the control data unstable and may cause malfunction.

Notice

Connecting the RM-45 instead of the OCP-45 and using it together with the RCP-50 in the parallel mode will cause some control problems. We do not recommend such use.

[Setting of RM-45 Dip Switch]

Various settings can be made by SW3 on the CONTROL BOARD in the RM-45. Make setting according to use.

CONTROL BOARD

SW3 (MODE)

8	ON
7	ON
6	ON
5	ON
4	ON
3	ON
2	ON
1	ON

ON ↔ OFF
(factory-setting)

No.	Function
1	Set to OFF. CALL switch can be set to the VTR START/STOP switch in the U4 command mode. ON : CALL OFF : VTR
2	For RM-45, set to ON.
3	Spare. Set to OFF.
4	Spare. Set to OFF.
5	Controllable range setting of the GAIN knob. ON : ±6dB OFF : ±3dB
6	Response speed setting of FAST/SLOW for the variable shutter. ON : High sensitivity OFF : Standard
7	Blinking mode setting of indicator in case of NG at AWB or ABB Set to OFF normally. ON : Blinking for 10 seconds, then automatically going off OFF : Keeping on blinking
8	On-air tally guard setting. Set to OFF normally. ON : Out of guard. OFF : Under guard.

[Setting of OCP-45 Dip Switch]

Various settings can be made by SW1 on the CONTROL BOARD in the OCP-45. Make setting according to use.

S1 (MODE)

CONTROL BOARD

S2 (REMOTE)

OFF ↔ ON

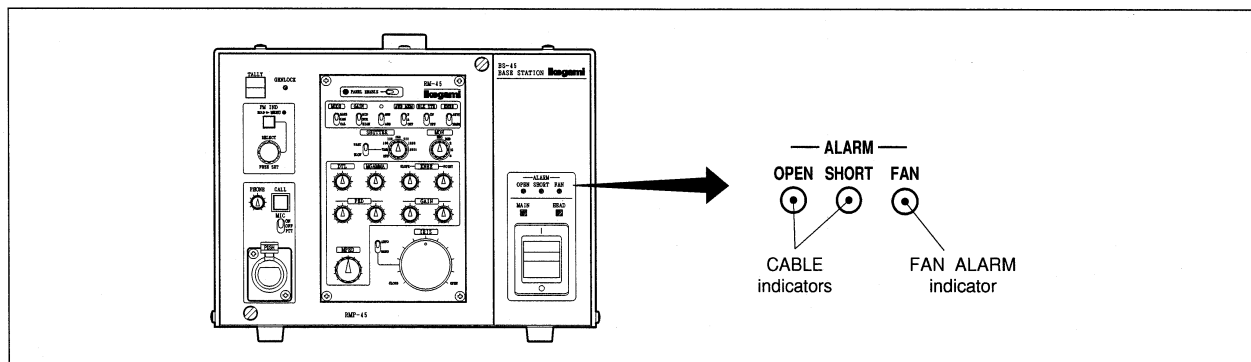
As for S2, there is no REMOTE PANEL connection function. Set to all OFF.

NO.	Function
1	Variable R/B GAIN range. ON : ±6dB OFF : ±3dB
2	Spare. Set to OFF.
3	Controls the beep when any switch on the MCP panel is pressed. ON : Beeps when the operable switches are pressed. Beeps three times when the inoperable switches are pressed. OFF : Beep once when the operable switches are pressed. Beeps three times when the inoperable switches are pressed.
4	Spare. Set to OFF.
5	Controls the ON-AIR tally guard. During ON-AIR, the switches on the MCP panel are prohibited. ON : Prohibited. OFF : Not prohibited.
6	Spare. Set to OFF.
7	Spare. Set to OFF.
8	ON : Maintaining the previous state when connected to OCP. (The following items cannot be controlled from OCP.) OFF : The DTL, FLARE, KNEE, W.CLIP ON-OFF in case of self operation being automatically ON when connected OCP.

☐ : Setting made at factory.

5. Trouble Shooting

5.1 CABLE and FAN ALARM Indicators Lit



[OPEN]

Cause : The camera cable is not connected or is open (cut).

Measures : Connect the cable normally, or exchange it for a new one if it is open.

[SHORT]

Cause : The camera cable is short-circuited.

Measures : Dry the connector by a heat gun if it is wet.

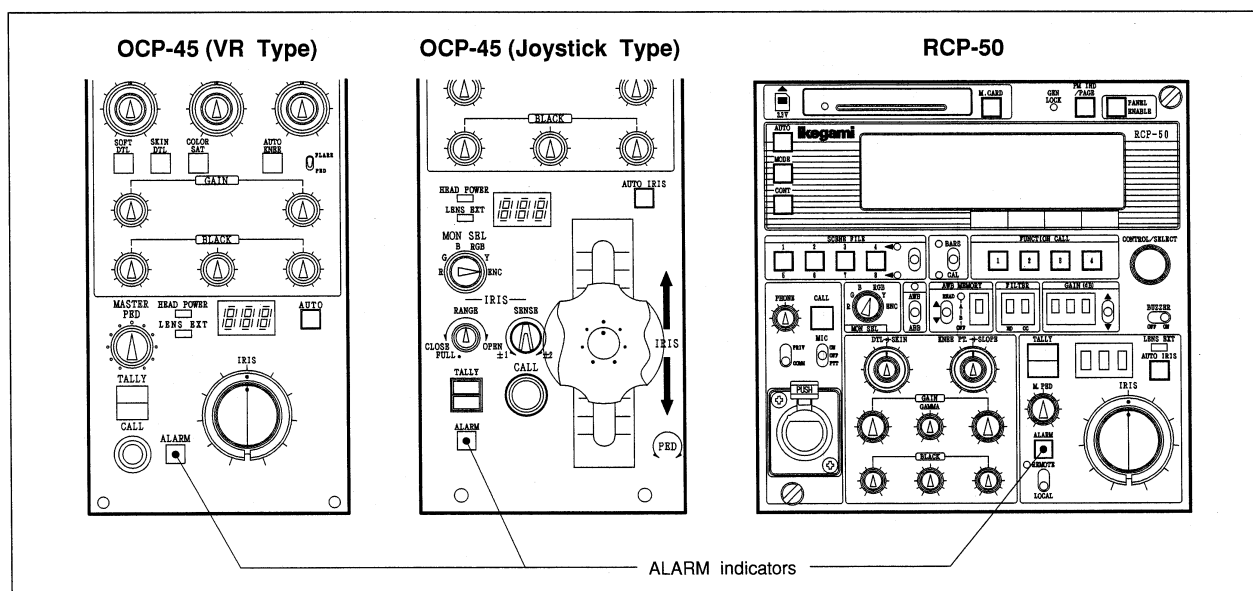
[FAN]

Cause : The fan stops due to some abnormality.

At this time, the self-diagnostic information (refer to "5.2 ALARM Indicator Lit") appears on the picture monitor screen.

Measures : Check if the fan is behaving abnormality.

5.2 ALARM Indicator Lit



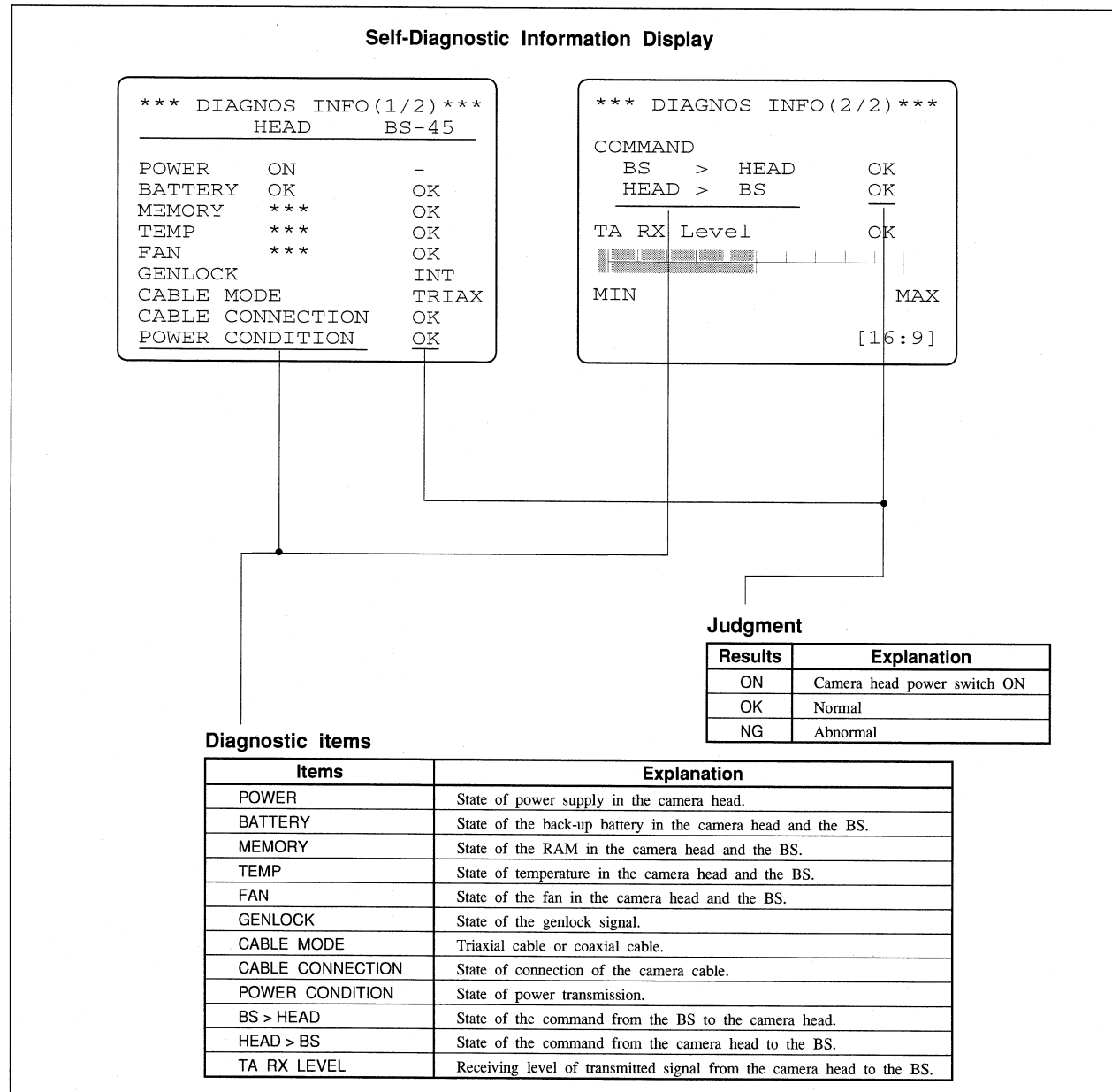
The BS-45 has the self-diagnostic function which monitors abnormalities in the entire camera chain. When the power is turned on, the self-diagnostic function begins working and monitors continuously during operation.

If an abnormality occurs in the BS or the camera head, it detects this and causes the ALARM indicators of the control panels to blink. At this time, the self-diagnostic information appears on the VF screen and the picture monitor screen for 20 seconds.

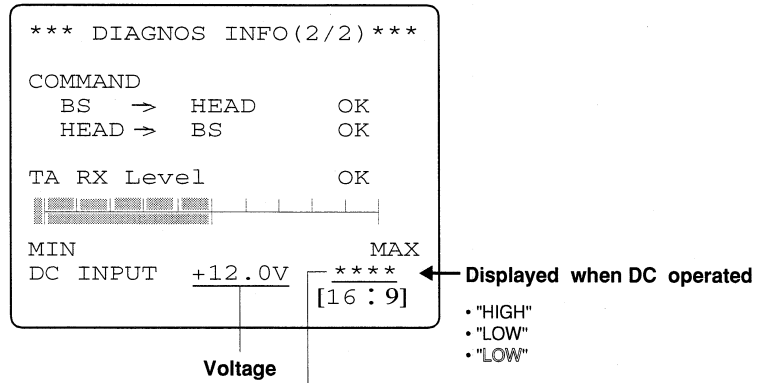
[Indication of Self-diagnostic Information]

The PM IND mode comes when the PM IND/MENU switch at the front of the BS is pressed. (The MENU mode appears when the PM IND/MENU switch is pressed for 2 seconds.)

In the PM IND mode, information page changes as the PM PAGE/MENU SELECT knob is turned.



Display when DC operated



DC power voltage is shown at DC INPUT.

The self-diagnostic when voltage goes over +17.0V or under +11.0V.

- "HIGH" is displayed inverted when the voltage is +17.0V.
ALARM indicator on the control panel starts to blink.
- "LOW" is displayed inverted when the voltage is between +11.0V and 10.5V.
The self-diagnostic information disappears in 20 seconds.
- "LOW" is displayed inverted when the voltage goes under +10.5V.
ALARM indicator on the control panel starts to blink.

(This page is blank.)

TA-45/BS-45 TRIAX SYSTEM

OPERATION MANUAL

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